

2017

Inclusion of Students with Autism: Teacher Perceptions Regarding Evidence-Based Strategies and Staff Supports in Pennsylvania

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Inclusion of Students with Autism:
Teacher Perceptions Regarding Evidence-Based Strategies and Staff Supports in Pennsylvania
by
Kimberly J. Seymour, M.Ed.
Presented to the Graduate and Research Committee of Lehigh University in Candidacy for the
Degree of Doctor of Philosophy
in
School Psychology
Lehigh University
November 11, 2016

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2016

Certificate of Approval

Approved and recommended for acceptance as a dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Acknowledgements

I would like to extend my sincerest gratitude to my advisor, Dr. Christine Cole, without whom the completion of this dissertation would not have been possible. Her enduring encouragement, patience, and unwavering support for me throughout this process has been invaluable.

I also wish to thank my committee members, Dr. Natalie Sokol, Dr. Grace Caskie and Dr. H. Lynn Columba for their assistance in finalizing this project. The unique skills and immense knowledge these women contributed have helped me to grow professionally and develop a final product of which I am immensely proud.

Finally, I would like to thank my colleagues, friends, and family who extended both professional and personal encouragement throughout my academic career. The support of these individuals was vital to my perseverance and will not be forgotten.

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Abstract

Legal and philosophical shifts away from segregated instruction and toward inclusive education have resulted in a dramatic increase in the number of students with Autism Spectrum Disorders (ASD) being educated in general education settings. Unfortunately, relatively little is known about the inclusion practices and supports that are available, as well as those that are still needed by teachers, to fulfill this mandate. The purpose of this study was to explore teachers' perceptions in the Commonwealth of Pennsylvania regarding (a) the use of and needs related to evidence-based strategies for effectively including students with ASD, and (b) the availability of and needs related to staff support for effectively including these students in general education classrooms. Implications for future research and practice are discussed.

CHAPTER 1

Statement of the Problem

Autism is a complex, lifelong neurological disorder that is characterized by social-communication and behavioral impairments, and affects all racial, ethnic, and socioeconomic groups (American Psychiatric Association, 2013; Frieden, Jaffe, Cono, Richards, & Iademarco, 2014). The global prevalence of autism has increased twentyfold to thirtyfold since the earliest epidemiologic studies were conducted in the late 1960s and early 1970s. The Center for Disease Control and Prevention (CDC) now estimates that 1 in 68 children (or 14.7 per 1,000 8-year-olds) in the U.S. has been identified with autism (CDC, 2014; Frieden et al., 2014). This new estimate is roughly 30% higher than previous estimates reported in 2012 of 1 in 88 children (11.3 per 1,000 8-year-olds) being identified with autism. This dramatic increase in number of children identified as having autism has made it more common than diabetes, spinal bifida, or Down syndrome among the pediatric population (CDC, 2014).

Since being added as a special education classification in the early 1990s, the number of students ages 6 through 21 served through public education programs under the “autism” classification has skyrocketed from just over 54,000 students in 1998 to more than 370,000 students in 2010 (CDC, 2014). This overall increase in prevalence, as well as the remarkable rise in the number of students receiving special education services under the autism classification, has brought increased attention to the unique needs of these individuals and urgency to establish effective educational supports.

Characteristics of Students with ASD

The most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) consolidated the three distinct autism conditions (i.e., autistic disorder, PDD-NOS, and

Asperger disorder) into one condition termed Autism Spectrum Disorder (ASD) with no subtypes. According to DSM-5, ASD is characterized by persistent difficulties in social communication and social interactions, as well as restricted, repetitive patterns of behavior, interests, or activities exhibited in early childhood (APA, 2013). Although wide variation in the characteristics and severity of ASD has been reported in the literature, social and communication difficulties including a lack of self- and other-awareness are a primary feature of the disorder (Jordan, 2005). Behavioral symptoms commonly associated with the disorder include hyperactivity, limited attention, impulsivity, aggression, self-injurious behavior, and temper tantrums. Unique sensory responses may include high pain thresholds, hypersensitivity to auditory, tactile, visual, and other stimulation, and fascination with certain stimuli. In addition, abnormalities in mood, affect, and diet may be evidenced (APA, 2013). The significant social, communication, and behavior impairments affecting individuals with ASD present unique challenges for educators.

Inclusive Education for Students with ASD

Throughout their lives, individuals with ASD may struggle to relate appropriately to others, present a wide range of language and communication eccentricities, have difficulty following and mastering unmodified school curriculum, exhibit a rigid reliance on maintaining routines, and engage in atypical behavior often difficult to understand by others (Simpson, Boer-Ott, & Smith-Myles, 2003). To address these unique communication, social, and behavioral needs, many students with ASD require long-term educational supports that have historically been provided in segregated settings. However, philosophical and legal shifts in educational practices toward inclusion have affected all individuals with disabilities including students with ASD.

A pedagogical shift away from segregation toward inclusion was first evidenced in 1971 with the landmark case of *Pennsylvania Association of Retarded Children v. Commonwealth of Pennsylvania* in which it was ruled that children diagnosed with mental retardation in the state of Pennsylvania should be entitled to a free public education, and should not be segregated but rather educated in regular classrooms whenever possible. This ruling was expanded to include all children with disabilities in 1972 with *Mills v. Board of Education of District of Columbia*. Most recently, the Reauthorization of the Individuals with Disabilities Act (IDEA) in 1997, No Child Left Behind (NCLB) 2002, and Gaskin Settlement Agreement of 2005 have facilitated access of students with special needs to education in the least restrictive environment, providing students with ASD increased participation in inclusive education. Specifically, the most recent reauthorization of IDEA (2004) mandates that children with disabilities be educated in general education classrooms with their typical peers to the maximum extent possible. The law also states that children with disabilities may only be removed from general education and placed in special education when, due to the nature or severity of the disability and with the appropriate supports and services, they cannot receive a satisfactory education in the general education classroom (IDEA, 2004). Students with ASD have therefore gained legal entitlement to education in maximally normalized settings with the greatest opportunity for interaction with typical peers.

Historically, inclusion has been used to define where a student is educated. However, more recently, the concept of inclusion has been conceptualized as the presence, participation, acceptance, and achievement of a student with disabilities in a general education classroom or activity (Humphrey & Lewis, 2008). Inclusion is viewed by many as an appropriate practice due to the potential benefits for children with ASD that are directly associated with the core

symptoms of ASD. Examples include the increased opportunity for social interactions with typical nondisabled peers; the possibility of developing friendships; the gains in communication, social, and adaptive behavior skills; and the participation in age-appropriate activities that may enhance social competence and ultimately lead to successful post-school adjustment (Hunt, Goetz & Anderson, 1986; Hunt & McDonnell, 2007; McDonnell, Thorson, & McQuivey, 1998). Empirical research has in fact demonstrated a variety of specific positive social and academic outcomes of inclusion including higher levels of engagement and social interaction, higher levels of social support, larger social networks, and developmentally more advanced individualized education plan goals than their counterparts in segregated placements (e.g., Boutot & Bryant, 2005; Harrower & Dunlap, 2001; Myers, Ladner, & Koger, 2011).

Barriers to Inclusion

Despite the legislative mandates and the many benefits of inclusion, as of 2011 only 39% of students with ASD were included full time (80% or more) in general education (U.S. Department of Education, 2015). While there may be several explanations for the low percentage of students with ASD in general education, it is clear that there are a variety of significant barriers including limited administrative support, negative teacher attitudes, and the presence of disruptive behaviors.

Limited administrative support. The attitudes of school administrators, most notably principals, have direct and profound implications for inclusive school policies and practices, as well as the allocation of resources to support inclusion (Cook et al., 1999; Horrocks, White, & Roberts, 2008; Janney, Snell, Beers, & Raynes, 1995). For inclusion to be successful, the principal needs to create a systems-level climate in which the whole school embraces success and achievement for all students, and must ensure that resources for curriculum and instruction

support this ideal (Horrocks et al., 2008; Janney, Snell, Beers, & Raynes, 1995). Despite this belief that the principal's attitude can directly affect the success or failure of inclusive practices, few studies have examined principal's attitudes toward inclusion and the influences behind those attitudes. The few available studies have confirmed the influence of principal attitudes and have shown that principals who prioritize instructional issues, demonstrate support for special education, and provide high-quality professional development for educators produce improved outcomes for students with disabilities such as ASD and others who are at risk for school failure (e.g., Barnett & Monda-Amaya, 1998; DiPaola & Walther-Thomas, 2003; Horrocks et al., 2008). For example, according to DiPaola and Walther-Thomas (2003), effective principals invest and allocate the necessary resources to devise policies and procedures that facilitate classroom support such as personnel and materials, information, role flexibility, and shared leadership opportunities. The extent of administrative support impacts the degree to which educators develop and implement interventions designed to improve student performance (DiPaola, & Walther-Thomas, 2003). Principals who foster positive attitudes toward inclusion can also ensure that classroom teachers have regularly scheduled common planning time to address instructional needs and classroom concerns (DiPaola & Walther-Thomas, 2003).

Negative teacher attitudes. Given their direct responsibility for implementing inclusionary practices, teachers' perceptions of administrative and other types of support are critical (Lohrmann & Bambara, 2006). Early research has established that teachers generally support inclusion as a desired practice, but lack the training and resources to educate students with substantial needs in regular education settings (Scruggs & Mastropieri, 1996). Data on teacher beliefs regarding inclusionary practices may help to assist school administrators in providing needed supports to ensure successful outcomes for all students.

In a qualitative interview study, Lohrmann and Bambara (2006) explored the perspectives of 14 general education elementary teachers about the supports they needed to effectively include a student with challenging behaviors in their classrooms. Teachers reported two levels of support: 1) a school-wide culture of support with an articulated vision for inclusion, in-class support, and collegial atmosphere; and 2) individualized supports provided in response to emerging teacher needs. Findings indicated that student reputations, teacher experience, and teacher training also shaped teacher attitudes toward inclusion (Lohrmann & Bambara, 2006).

In one of the earliest, yet most comprehensive studies, Werts, Wolery, Snyder, Caldwell, and Salisbury (1996) surveyed 1430 elementary general education teachers to identify their perceptions of the need for and availability of resources and supports to include students with disabilities in their classrooms. Disability categories included learning disabilities, speech/language disorders, behavior disorders, serious emotional disturbance, mild mental retardation, moderate mental retardation, severe mental retardation, visual impairment/blindness, hearing impairment/deafness, physical disabilities, and severe physical disabilities. Results indicated teachers of students with disabilities reported a greater need for, than availability of, most resources and supports. This was particularly the case for teachers of students with more substantial needs (Werts et al., 1996).

More recent research on teacher's attitudes regarding the inclusion of students with ASD has been conducted largely outside of the United States. For example, Lindsay, Proulx, Thomson, and Scott (2013) explored Canadian teachers' perceived challenges and strategies for creating inclusive environments for students with ASD. Seven special education and six regular education teachers with inclusive teaching experience participated in semi-structured interviews. Teachers reported several challenges with attempts to involve students with ASD in general

education settings including understanding and managing behavior, socio-structural barriers (i.e., school policy, lack of training and resources), and creating an inclusive environment (i.e., lack of understanding from other teachers, students, and parents).

In England, Frederickson, Jones, and Lang (2010) explored the training and supports available to assist teachers of students with ASD in inclusive schools. Semi-structured interviews were conducted with special education administrators, general and special education teachers, and teaching assistants in 26 inclusive schools. About half of all respondents reported that further training would be useful. Additional desired supports included more funding to facilitate inclusion, as well additional supplementary services such as Speech or Occupational Therapy. However, the study had several limitations. First, the strategies and supports that were identified by participants were simply categorized by themes that varied greatly. Labels such as “social skills training” and “behavioral management programs” were not clearly operationalized. In addition, differences between perceived availability and need for evidence-based practices were not explored, and there was no reference to the specific “evidence base” from which these practices were derived. Further research is obviously needed.

Presence of disruptive behaviors. Research also indicates that teachers’ attitudes toward inclusion may be shaped by student characteristics such as disruptive behaviors (Robertson, Chamberlain, & Kasari, 2003; Yianni-Coudurier, Darrou, Lenoir, Verrecchia et al., 2008). For example, Robertson et al. (2003) surveyed teachers of students with ASD and found that negative student behavior was correlated with a more negative relationship between the teacher and student, which hindered successful inclusion. Yianni-Coudurier et al. (2008) similarly found that negative teacher attitudes toward inclusion increased as severity of ASD symptoms increased. Removal from the general education classroom is among the most common

consequences for repeated engagement in disruptive behavior (Algozzine & Algozzine, 2007; Jull, 2008). Many schools never even consider placing students with ASD in general education because of the additional provision in IDEA 2004 that allows for the removal of children with disabilities from general education settings if the nature or severity of the child's disability inhibits his or her learning. Other schools may consider including students with ASD in general education classrooms, but may require the child to "earn" his or her way into inclusive setting, thereby functionally preventing the child access to the general education (Merrell, Ervin, & Gimpel, 2006). Considering that 64-93% of individuals with ASD engage in challenging behaviors, this student population is at a high risk for exclusion from general education classrooms (McTiernan, Leader, Olive, & Mannion, 2011). Exploring the relationship between symptom severity and students' participation in inclusionary activities may inform professional development practices to ensure all students are educated in the least restrictive environment.

The availability of adequate resources and supports for the general education teachers who are responsible for implementing effective interventions is pivotal (Werts et al., 1996). Unfortunately, general education teachers often lack the experience and training needed to effectively intervene with students with ASD in their classrooms because, historically, special education teachers have been accountable for the educational and behavioral programming of these students (Dingle, Falvey, Givner, & Haager, 2004; Fuchs, 2010; Lohrmann & Bambara, 2006). Also, including students with ASD in general education settings requires additional teacher planning time to individualize supports, plan alternative or additional activities, and develop individualized instructional methods appropriate to the students' needs (Simpson et al., 2003). Students with ASD may also require higher levels of teacher-student interaction and

classroom structure than their typical peers, but smaller class sizes are not always feasible (Simpson et al., 2003).

Evidence-Based Strategies

For many students with ASD, it is critical that evidence-based interventions be implemented for social, communication, and behavioral difficulties, to support and ultimately allow them access to general education settings. Although IDEA and the Elementary and Secondary Education Act (ESEA) mandate the use of programs, curricula, and practices based on “scientifically-based research,” many students with ASD continue to participate in programs and interventions lacking empirical support (Hess, Morrier, Heflin, & Ivey, 2008; Stahmer, Collings, & Palinkas, 2005). In the first of only two available studies examining interventions utilized in public educational settings, Stahmer et al. (2005) investigated techniques employed in community early intervention programs in California. Four focus groups were conducted with 22 early intervention service providers working in both center-based and home settings. Participants were identified as the primary service provider or supervisor in an educational/EL program with at least one child with autism enrolled in his or her program. Results indicated that, while most participants expressed a desire to provide evidence-based interventions, both researched and non-researched practices were being used. Furthermore, significant modifications and adaptations to evidence-based programs used were often reported. All providers indicated a lack of adequate training and preparation for teachers and paraprofessionals as a critical concern.

In a second study, Hess et al. (2008) surveyed 185 teachers across the state of Georgia on strategies used to educate students with ASD in preschool through 12th grades. The authors found that fewer than 10% of strategies used by all teachers were evidence-based and one third

of treatments reportedly used had limited support. These findings have clear implications for educator training in the use of evidence-based strategies to support students with ASD.

Statement of the Problem

The debate over whether to include students with disabilities in general education settings has been resolved by legislation and litigation. Despite these mandates and the many benefits of inclusion, as of 2011 only 39% of students with ASD were included full time in general education (U.S. Department of Education, 2015). It is clear there are a variety of significant barriers to inclusion of this unique student population. Therefore, the question remains as to *how* to make this mandate a reality for students with ASD. Recent increases in ASD prevalence rates and pervasive social, communication, and behavioral needs of these students make this a critical issue for both general and special educators. For example, students with ASD often require the use of evidence-based intervention strategies that many otherwise-skilled general education teachers reportedly feel ill-equipped to provide (Crosland & Dunlap, 2012; Horrocks et al., 2008). Other barriers such as negative principal attitudes may limit necessary staff support (e.g., adequate planning time, consultation with school psychologists) for inclusion of these students. Little research, and few models and procedures exist to guide educators in facilitating the successful inclusion of students with ASD. Consequently, teachers are often left to haphazardly develop programs in the absence of clear protocols (Horrocks et al., 2008). While some teachers have successfully included students with ASD, others have not been successful. Negative teacher attitudes and a lack of information regarding evidence-based practices and staff support needed for this student population are obvious barriers to inclusion of students with ASD in general education classrooms.

Although inclusive education has substantial empirical support, students with ASD present unique challenges for general and special educators. Little research is available regarding the use of and training needs related to evidence-based strategies for effectively including students with ASD, and the availability of and training needs related to staff support for successfully including these students. Only a few studies have investigated inclusive practices for students with ASD and most were conducted outside the U.S. (e.g., Frederickson et al., 2010; Humphrey & Lewis, 2008; Lindsay et al., 2013; Osborne & Reed, 2011; Yianni-Coudurier et al., 2008). For example, the Frederickson et al. (2010) study conducted semi-structured interviews with school staff in England, limiting generalizability of results to students in the United States. Also, “evidence-based strategies” were not clearly operationalized, and there was no reference to the specific “evidence base” from which they were derived. In addition, the study did not explore differences between use of and training needed for evidence-based inclusion practices. Similarly, Lindsay et al. (2013) explored teachers’ perceived challenges and strategies for creating an inclusive environment for students with ASD in Canada. Again, the specific resources and support used and needed to facilitate inclusion were not addressed in this study. Although the Werts et al. (1996) study explored elementary teachers’ perceptions of the availability and need for resources and supports to include students with a range of disabilities, ASD was not one of the disabilities categories investigated. While the teachers’ perceptions of their need for supports were related to their ratings of severity of their students’ disabilities, the results cannot be directly related to these students since ASD was not one of the disabilities explored. Furthermore, the results of this investigation may not generalize beyond elementary school.

Perceptions of teachers in the U.S. regarding the use and need for evidence-based strategies and staff support to successfully include students with ASD in general education settings have not been adequately investigated in the literature. Identifying educators' perceptions of current inclusionary practices and available supports, as well as the supports still needed to ensure students with ASD have access to the least restrictive environment will hold important implications for training educators as well as future inclusionary practices in Pennsylvania schools.

Purpose of the Proposed Study

The proposed study will use survey methodology to explore Commonwealth of Pennsylvania general and special education teachers' perceptions of (a) the use of and needs related to evidence-based strategies for effectively including students with ASD, and (b) the availability of and needs related to staff support for effectively including students with ASD in general education settings. This study aims to extend the research to identify the current use/availability of strategies/support and training that is still needed to meaningfully include students with ASD in Pennsylvania public schools. It is hoped that the results of this study will serve to produce professional development objectives that facilitate the inclusion of students with ASD in the general education curriculum.

More specifically, the following research questions will be addressed in the proposed study:

1. *To what extent do Pennsylvania educators report that students with ASD at their school are participating together with peers without disabilities in school activities?*

Based on the 2015 report published by the U.S. Department of Education, National Center for Education Statistics (U.S. Department of Education, 2015), it is hypothesized that

Pennsylvania educators will report fewer than half of students with ASD are participating together with peers without disabilities full time (80% or more of school activities).

2. *To what extent do Pennsylvania educators report their adequacy of training to teach students with ASD?*

Based on the findings of Scruggs and Mastropieri (1996), Werts et al. (1996), and Fuchs (2010), it is hypothesized that Pennsylvania educators will report a lack of adequacy of training to teach students with ASD.

3. *Regarding evidence-based strategies to facilitate the inclusion of students with ASD:*

- a. *What evidence-based strategies are reportedly available at the schools of Pennsylvania educators to facilitate the inclusion of students with ASD?*

Although no study to date has directly measured educators' perceived availability of evidence-based strategies to facilitate the inclusion of students with ASD, the findings of Hess (2008) suggest that a variety of evidence-based strategies may be available.

- b. *To what extent do Pennsylvania educators report that they have used evidence-based strategies to facilitate the inclusion of students with ASD?*

Based on the results of Hess et al. (2008) and Stahmer et al. (2005), it is hypothesized that few evidence-based strategies will be reported as used by educators to facilitate the inclusion of students with ASD.

- c. *To what extent do Pennsylvania educators report that evidence-based strategies are needed to facilitate the inclusion of students with ASD?*

Based on the findings of Stahmer et al. (2005), it is hypothesized that a high degree of need for evidence-based strategies to facilitate the inclusion of students with ASD will be reported by Pennsylvania educators.

- d. *Do perceptions about the need for evidence-based strategies for facilitating the inclusion of students with ASD differ significantly for educators of students with minimal support needs as compared to educators of students with substantial support needs?*

Based on the findings of Werts et al. (1996), it is hypothesized that a significantly greater need for evidence-based strategies will be reported by teachers of students with more substantial needs as compared to educators of students with minimal substantial needs.

4. *Regarding staff supports to facilitate the inclusion of students with ASD:*

- a. *To what extent do Pennsylvania educators report that staff supports are made available to them to facilitate the inclusion of students with ASD?*

Based on the findings of Werts et al. (1996), it is hypothesized that Pennsylvania educators will report a general lack of availability of staff supports to facilitate the inclusion of students with ASD.

- b. *To what extent do Pennsylvania educators report that they have used staff supports to facilitate the inclusion of students with ASD?*

Although no study to date has directly measured educators' perceived use of staff supports to facilitate the inclusion of students with ASD, it is hypothesized that Pennsylvania educators will report a moderate use of staff supports to facilitate the inclusion of students with ASD.

- c. *To what extent do Pennsylvania educators report that they believe that staff supports are needed to facilitate the inclusion of students with ASD?*

Based on the findings of Werts et al. (1996), it is hypothesized that Pennsylvania educators will report a great need for staff supports to facilitate the inclusion of students with ASD.

- d. *Do perceptions about the need for staff supports for facilitating the inclusion of students with ASD differ significantly for educators of students with minimal support needs as compared to educators of students with substantial support needs?*

Based on the findings of Werts et al (1996), it is hypothesized that educators of students with substantial support needs will report a significantly greater need for staff support than educators of students with minimal support needs.

CHAPTER 2

Literature Review

The autism spectrum refers to the continuum of pervasive developmental disorders which includes Autistic Disorder, Asperger's syndrome, and Pervasive Developmental Delay–Not Otherwise Specified (PDD-NOS) [Center for Disease Control (CDC), 2013]. According to the *Diagnostic and Statistical Manual of Mental Disorders, 5th ed.* [(DSM-5) APA, 2013], Autism Spectrum Disorders (ASD) are characterized by significant and pervasive impairments in social and communication skills, as well as repetitive behaviors and restrictive patterns of interests. Although the features and severity of ASD vary considerably across individuals, sociability difficulties that include a lack of self- and other-awareness are a primary feature (Jordan, 2005). Behavioral symptoms commonly associated with ASD include hyperactivity, limited attention, impulsivity, aggression, self-injurious behavior, and temper tantrums. Unique sensory responses are also associated with ASD and may include high pain thresholds, hypersensitivity to auditory, tactile, visual, and other stimulation, and fascination with certain stimuli. In addition, abnormalities in mood, affect, and diet are commonly evidenced among individuals with ASD (APA, 2013). The significant communication, social, and behavior impairments affecting individuals with ASD present unique challenges for educators.

History of Inclusive Education

Prior to 1974, most states permitted the academic exclusion of children with disabilities, including those with ASD, under the notion that these students could not benefit from education or were too disruptive to their typical peers. As recently as 1969, it was still illegal in North Carolina for a parent to attempt to enroll a previously-excluded child with a disability in public school (Weber, 1992).

In the Commonwealth of Pennsylvania, the situation began to change in 1971 following the Supreme Court decision in the *Pennsylvania Association of Retarded Citizens (PARC) v. Commonwealth of Pennsylvania* case in which the commonwealth was charged with denying students with mental retardation (intellectual disability) equal opportunity to education required under the *Brown v. Board of Education* ruling in 1954. Specifically, prior to 1971, Pennsylvania state law permitted public schools to deny services to children who had not attained a mental age of 5 years by the time they turned 8 years old (*PARC v. Commonwealth of Pennsylvania*, 334 F. Supp. 279; E/D/ PA 1972). *PARC v. Commonwealth of Pennsylvania* was the first right-to-education suit in the United States to overturn that law and secure a free public education for children with mental retardation. On October 8, 1971, the Supreme Court declared several state laws unconstitutional and required the state to evaluate and place all students with mental disabilities ages 6-21 in a proper publicly funded educational setting (*PARC v. Commonwealth of Pennsylvania*, 334 F. Supp. 279; E/D/ PA 1972). Then in 1972, the Board of Education of the District of Columbia was similarly charged with denying students with disabilities access to a free and appropriate public education (*Mills v. Board of Education of the District of Columbia*). Specifically, the Plaintiffs charged the District of Columbia Board of Education with denying “exceptional students,” or those with behavioral problems, mental disabilities, emotional disturbances, or hyperactivity, admission to public schools with no alternative placement or periodic review of their status (*Mills v. Board of Education of District of Columbia*, 348 F. Supp. 866; D.C. 1972). On August 1, 1982, the Court entered Summary Judgment for the Plaintiffs declaring it unconstitutional to exclude any child from a public education setting unless provided adequate alternative educational services suited to their needs and prior hearing and periodic review of the child’s status, progress, and adequacy of the educational alternative (*Mills v. Board*

of Education of District of Columbia, 348 F. Supp. 866; D.C. 1972). Both the Mills and the PARC cases held that children with special needs must be given access to an adequate, publicly supported education.

These civil action cases paved the way for the passing of Public Law 94-142, the Education of All Handicapped Children Act, assuring all students access to public education regardless of disability. This legislation has undergone several amendments, most recently in 2004, and is now referred to as the Individuals with Disabilities Education Act (IDEA). IDEA mandates, “to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children that are nondisabled; and that special classes, separate schooling or other removal of children with disabilities from the regular educational environment occurs only if the nature or severity is such that education in regular classes with the use of supplementary aids and services, cannot be achieved satisfactorily” (IDEA, 34 CFR §§300.550-300.556). This legislation has been the impetus behind increased efforts to involve students with disabilities, including those with ASD, in general education activities and settings.

In Pennsylvania, the *Gaskin v. Pennsylvania* case was a more recent driving force behind increased focus on inclusive practices. The class-action lawsuit against the state Department of Education was filed by a group of families and advocacy organizations on behalf of students with disabilities who had allegedly been denied a free, appropriate public education in general education classrooms with individualized supports and services, or had been placed in general education classrooms without the needed supports, services, and/or accommodations to be successful (*Gaskin v. Pennsylvania*, 389 F.Supp. 2d 628, 2005). The settlement aimed to increase the capacity of school districts to provide appropriate specially-designed instruction, related

services, supplementary aids and services, and support to students with disabilities in the regular education setting.

Benefits of Inclusion

Inclusion of students with disabilities in general education classrooms has been encouraged, both through legislation and advocacy efforts, at least partially as a result of the large body of empirical evidence that suggests a variety of social and academic benefits for students with disabilities, as well as for their general education peers.

Social benefits of inclusion. Social impairment is one of the core features of ASD that is consistent across the spectrum (APA, 2013). Multiple studies examining the effects of inclusion have found that students in inclusive settings have better outcomes on measures of social competence than students educated primarily in segregated settings. In a review of 36 studies examining the effects of inclusion on students with disabilities, Freeman and Alkin (2000) found that students with disabilities whose primary placement was the general education classroom outperformed those students with disabilities in segregated settings on measures of social competence. The review also found that the typical students' level of acceptance of their peers with disabilities was positively correlated with time spent in the general education classroom.

Fisher and Meyer (2002) also assessed the effects of educational placement on the social competence and development of 40 students with significant disabilities. Specifically, students with moderate to profound intellectual disability, autism, dual sensory impairments, or multiple disabilities (cognitive impairments and motor and/or sensory impairments) participated in the study. All students were receiving special education supports and services at the highest intensity levels. Students were enrolled in one of two service conditions: inclusive (receiving services in the general education setting for most of the day) or self-contained (receiving all supports and

services in a self-contained setting with inclusive participation only in community-based instruction). The *Scales of Independent Behavior (SIB*; Bruininks, Woodcock, Weatherman, & Hill, 1984) and the *Assessment of Social Competence (ASC*; Meyer et al., 1985) were administered to measure developmental functioning and social competence, respectively. Results indicated students in the inclusive condition made statistically significant gains on the developmental measure and had higher social competence scores at follow-up as compared to their counterparts who were instructed in the self-contained setting.

McDonnell and colleagues (2003) conducted an exploratory study to evaluate the impact of inclusive education on the achievement of students with developmental disabilities and their typical peers. The study used a quasi-experimental pretest-posttest design to examine 14 students with disabilities, ranging from 1st through 5th grade, from urban, suburban, and rural school districts. The students' progress was assessed using the *Scales of Independent Behavior-Revised (SIB-R*; Bruininks, Woodcock, Weatherman, & Hill, 1996). Results of the study demonstrated a significant increase in adaptive behavior levels for 13 of the 14 students in the inclusive classrooms (McDonnell, Thorson, Disher, Mathot-Buckner, Mendel, & Ray, 2003).

Another investigation examined the effects of type of peer group on behaviors associated with happiness in five students with disabilities (Logan, Jacobs, Gast, Murray, Daino, & Skala, 1998). The study used an alternating treatments design to compare happiness behaviors (e.g., smiles, eyes open) during small group activities in an inclusive setting with typical peers, as compared with a segregated activity that involved only peers with disabilities. The study found that, when controlling for teacher behavior, time of day, position of the child, materials, activities, number of peers in each group, and peers composing the groups, the children with disabilities had higher levels of happiness behaviors during inclusive activities with typical peers

than in groups with only other peers with disabilities. This suggests that students with disabilities may be happier in inclusive settings than the segregated classrooms (Logan et al., 1998).

More recently, Lyons, Cappadocia, and Weiss (2011) examined the social characteristics of students with ASD across inclusive and non-inclusive classroom settings. A total of 146 parents of students with ASD who were enrolled in inclusive and segregated educational settings completed the Socialization subscale of *The Parent Perception Measure* (Lauderdale & Blacher, 2008; Lauderdale, Lee, & Kaladjian, 2009). The scale uses a 5-point Likert scale to measure social competence, where higher scores indicate greater social competence. In addition to the survey, parents were also asked to indicate the number of friends their child had, both in and out of school, and to rate the quality of their child's friendships on a single 5-point Likert scale, where higher scores indicated better quality. After controlling for severity of disability and age, the results of the study showed that students who participated in full inclusion classrooms were rated by parents as having greater social competence and more friendships inside school than those students who were placed in non-inclusive classroom settings (Lyons et al., 2011).

Overall, the research literature examining the effects of inclusion on social outcomes suggest that students with disabilities benefit from placement in general education classrooms. Considering the empirically-documented importance of strong social skills on the long-term outcomes for students with ASD (Licciardello, Harchik, & Luiselli, 2008; Sawyer, Luiselli, Ricciardi, & Gower, 2005), the social benefits of inclusion should not be overlooked for this population. This research suggests that all efforts should be made to support students with ASD in general education classrooms to maximize the social benefits offered in inclusive settings.

Academic benefits of inclusion. Multiple large-scale studies and smaller studies have documented the academic benefits of providing students with disabilities, including those with ASD, an inclusive education. Benefits include higher overall achievement (Blackorby et al., 2005; Cole, Waldron, & Majd, 2004; Dessementet et al., 2012; Freeman & Alkin, 2000), higher scores on statewide standardized tests (Luster & Durrett, 2003), higher rates of attendance (Blackorby et al., 2005), and a greater likelihood of graduating with a diploma (Luster & Durrett, 2003), as compared with students who were educated in segregated settings. Additionally, research has found that students who were included had more access to the general education curriculum (Kurth & Mastergeorge, 2010) and were more likely to achieve closer to grade level (Blackorby et al., 2005) as compared with students who were not included.

In their review, Freeman and Alkin (2000) examined studies that measured academic attainment of school-age children with disabilities who were included in general education settings. The review found either significantly better academic achievement of the included students, as compared with those who were not included, or no significant difference between the two groups in each of the nine studies. The authors noted that, in at least one of the studies that found no significant differences, it was stated that a second year of data collection may have indicated a significant difference in favor of inclusion. However, even equivalence in the groups arguably lends support to inclusion as it offers additional social benefits (Ormrod, 2006).

In an exploratory study conducted by the state of Louisiana, Luster and Durrett (2003) examined the effects on student and district outcomes (e.g., test performance and graduation) of placement in general education classes for the majority of the school day. The study examined the results of 16 districts within the state that were divided into two groups, the least and most inclusive districts based on number of students included for a full day. Students with disabilities

in the more inclusive districts were found to perform significantly better on their 8th-grade standardized assessments and were more likely to graduate with a diploma than those students in the least inclusive districts (Luster & Durrett, 2003).

Similarly, Cole, Waldron, and Majd (2004) examined the effects of inclusive school settings of six districts in Indiana that best represented the various geographic regions of the state and reflected urban, suburban, and rural locations. Inclusion was defined as a school in which students with disabilities received reading and math education in the general education setting. To measure progress, the *Basic Academic Skills Samples (BASS)*; Espin, Deno, Martuyama, & Cohen, 1989), a group-administered test of mathematics and reading abilities, was administered in the fall and spring of the same academic year. Results indicated that there was no significant difference between students with disabilities who were in inclusive settings and those in pullout settings. However, for students with more severe disabilities than a learning disability, there was a significant difference in achievement in favor of the inclusive setting (Cole et al., 2003).

A large-scale national study funded by the U.S. Department of Education (Blackorby, Wagner, Cameto, Davies, Levine, Newman, Marder et al., 2005) collected data on over 11,000 students with disabilities during a 6-year period as they moved from elementary to middle school, and middle to high school, with the purpose of measuring changes in the students' educational, social, vocation, and personal development over time. The sample for the study was randomly selected from rosters of students in special education, ages 6 through 12, provided by local education agencies and state-operated special schools. Data were collected through parent interviews, teacher and school surveys, school characteristics surveys, direct assessment of reading, math, self-concept, and attitudes about school, and transcripts. At the end of the longitudinal study, the data revealed that higher rates of inclusion were associated with decreased

absenteeism and greater academic success of students with disabilities. Specifically, for those students who spent about 75% of their academic day in general education classrooms, their levels of achievement in reading and math was closer to grade level (Blackorby et al., 2005).

Findings of two recent studies further demonstrate the academic benefits of inclusion. Kurth and Mastergeorge (2010) found significant differences between the general education and segregated setting for the students with disabilities. Students who were included with typical peers spent the majority of their educational time in math and language arts teacher-directed activities and seatwork, while those in the special education classes spent the majority of their time in individual seat work and were on break for nearly one-third of their instructional time. Controlling for accommodations to the curriculum and materials, data revealed that students in the special education setting had access to the general education curriculum about 0.1% of the time, while those in the general education classroom had access to the curriculum about 87.2% of the time (Kurth & Mastergeorge, 2010).

In a study by Dessementet et al. (2012), researchers measured academic achievement three times across 2 school years using a standardized academic achievement test. No significant differences existed between the two groups in mathematics; however, the students with disabilities who were included scored significantly higher on the literacy measure than those students in special schools. The authors concluded that placement in inclusion classrooms is an appropriate alternative to segregated settings (Dessementet et al., 2012). Overall, similar to the studies that examined social benefits, the empirical evidence regarding academic performance indicates that placement in the general education classroom can optimize outcomes for students with disabilities.

Benefits of inclusion for peers. Typical peers have also been observed to benefit from inclusive practices. Some of the studies described in the previous section that examined the social and academic impact of inclusion on students with disabilities also examined the impact on students without disabilities. For example, the Cole et al. (2004) study found that typical peers who were educated in inclusive settings made significantly more academic progress in math and reading than similar typical peers who were educated in segregated (non-inclusive) schools. Also, in the McDonnell et al. (2003) study, results indicated no significant differences in the academic performance of typical peers in inclusive classes vs. non-inclusive segregated comparison classes.

In another early study, Kishi and Meyer (1994) investigated the reports and recollections of teenagers' social contact with peers with significant disabilities as a function of elementary school experiences. Specifically, 183 students without disabilities in Hawaii public schools participated in two self-report interpersonal measures. Stratified random sampling procedure was implemented across three conditions: social contact (participation in the "Special Friends" program during elementary school years); exposure (enrolled at the same schools and were age cohorts of the contact group students, but no participation in "Special Friends"); and control group (age cohorts of contact and exposure groups, but enrolled in schools that did not include programs or classes for students with significant disabilities on their campuses). A subsample of 93 teenagers from the "contact group" were interviewed about their experiences and attitudes toward persons with disabilities and their memories from earlier school experiences. The *Acceptance Scale* (Voeltz, 1981) was used to measure teenagers' attitudes towards persons with disabilities and individual differences and the *Self-Observation Scale (SOS)* (Stenner & Katzenmeyer, 1979) was administered as an assessment of self-concept. Results indicated

significantly more positive attitudes, higher levels of reported social contact, and more support for full community participation as a function of earlier social contact with individuals with disabilities.

Two additional large-scale studies (Huber, Rosenfeld, & Fiorello, 2001; Idol, 2006) examined the outcomes of inclusion on typical peers. Huber and colleagues followed 477 students in 1st through 5th grade for 2 years. The participants were divided into three skills groups for math and reading (e.g. high, average, low achieving) based on their scores on a standardized test. Analysis of the data suggested that inclusion affected the groups differently. The students who were classified as low achievers benefited academically in inclusive classrooms across math and reading. Across all three groups, math scores increased significantly as long as there were no more than five students with disabilities included in the classroom (Huber et al., 2001).

In the Idol (2006) study involving a program evaluation of eight schools, teacher reports were used to measure the impact of inclusion on typical peers. Four of the schools in the study were elementary schools and the other four were secondary schools. Teachers were interviewed regarding their thoughts on effects of the presence of students with disabilities on statewide testing, attitudes towards students with disabilities, and social skills. In the elementary schools, 36% of teachers reported an increase across all students on statewide test scores, while the others reported no change. In two schools, the educators reported improved attitudes towards students with disabilities, and in one school the educators reported that all students exhibited improved social skills. In the secondary schools, 82% of teachers reported no change or improvement on statewide test scores, social behaviors and attitudes towards students with disabilities (Idol, 2006).

In a review of the literature documenting the effects of inclusion on typical peers, Kalambouka, Farrell, Dyson and Kaplan (2007) reviewed 26 studies that conducted a longitudinal study of one school, or compared an inclusion setting and a school that practiced segregation. The review examined the impact of inclusion across the types of disabilities of the included students (e.g., cognitive, behavioral, sensory, communication) and across the academic and social outcomes of the typical students. Overall, the results indicated limited or no adverse effects of inclusion on typical peers. Of the 26 studies, 81% reported positive or neutral outcomes for typical peers in academics and social skills (Kalambouka et al., 2007).

In summary, along with the benefits that inclusion offers to students with disabilities, research indicates that inclusion can improve outcomes for typical peers. Multiple studies have documented the presence of benefits to peers without disabilities including better academic achievement (Cole et al., 2004; Huber et al., 2001; Idol, 2006; Kalambouka et al., 2007), improvements in social skills (Idol, 2006; Kalambouka et al., 2007), and greater tolerance and empathy for others (e.g., Downing & Peckham-Hardin, 2007; Ruijs, Van der Veen, & Peetsma, 2010). These studies provide additional evidence that inclusion is the best practice for educating students with disabilities.

Barriers to Inclusion

Despite the legislative mandates and the many benefits of inclusion, as of 2011 only 39% of students with ASD were included full time (80% or more) in general education (U.S. Department of Education, 2015). There are a number of possible barriers to including students with ASD in general education settings including limited administrative support, negative teacher attitudes, and the presence of disruptive behaviors.

Limited administrative support. The school environment, including the philosophical policies/practices and support/leadership of principals, are instrumental in establishing successful inclusion (Cook, Semmel, & Gerber, 1999; Crosland & Dunlap, 2012; Horrocks, White, & Roberts, 2008). Principals in particular directly affect implementation decisions and resource allocation, as well as supervise school personnel (Cook et al., 1999; Horrocks, White & Roberts, 2008). Therefore, the principal's attitude toward inclusion can be a powerful influence on school policies and practices. For inclusion to be successful, the principal needs to create a school climate in which the whole school embraces success and achievement for all students, and must ensure that resources for curriculum and instruction support this ideal (Horrocks et al., 2008; Janney, Snell, Beers, & Raynes, 1995). Despite knowledge of how the principal's attitude can directly affect the success or failure of inclusive practices, few studies have examined principal's attitudes toward inclusion and the influences behind those attitudes.

In one of the few investigations, Barnett and Monda-Amaya (1998) surveyed 65 principals, asking them to describe their definition of inclusion, their attitudes toward inclusion, and whether they felt that the teachers in their school were able to handle the demands of teaching students with special needs. Results indicated that the majority of principals defined inclusion as a supportive environment that required shared responsibilities for the child and an attitude of cooperation among the staff. With regard to the teacher's abilities, the majority of the principals did not feel that the general education teachers were trained to or capable of educating students with disabilities in the general education classroom. Not surprisingly then, the study also found that the principals indicated a low level of support for inclusion. The authors noted that the low level of support may have indicated the administrators' apprehension regarding the

need and ability to provide the appropriate level of support for the students who are included (Barnett & Monda-Amaya, 1998).

In another evaluation of attitudes toward inclusion, 49 principals provided their opinion regarding the inclusion of students with disabilities by rating their agreement with statements on the *School Environment Project Questionnaire* (Cook et al., 1999). Results indicated that most of the principals agreed with the positive statements regarding inclusion, indicating their belief that inclusion is a positive movement. However, despite their positive outlook on inclusion, the principals did not agree with statements that would suggest they were in favor of supporting inclusion in their school setting. For example, the majority of principals disagreed with the statement that general education teachers had the skills and training to teach all students regardless of disability status, and the majority agreed with the statement that teachers cannot meet the needs of students with disabilities in the general education classroom. Finally, only one-third of principals agreed that mandated resources should be protected for included students (Cook et al., 1999).

Praisner (2003) surveyed 408 elementary school principals to investigate relationships regarding attitudes toward inclusion, variables such as training and experience, and placement perceptions using the *Principals and Inclusion Survey*. Approximately 21%, or one in five, principals were found to have a positive attitude about inclusion. With regard to the relationship between attitude towards inclusion and other variables, more positive attitudes about inclusion positively correlated with placement in less restrictive environments. More experience with teaching students with disabilities, as well as increased number of in-service training hours and special education credits positively correlated with a positive attitude score (Praisner, 2003).

In a more recent study (Horrocks et al., 2008), 571 principals across elementary, middle, and high schools completed the *Principal's Perspective Questionnaire* (Horrocks, 2005) which assesses personal and professional characteristics, placement decisions, and specific attitudes about inclusion. Similar to the earlier studies, results indicated that the principals had positive attitudes towards the inclusion of students with ASD in general education classrooms. The study also found a correlation between positive attitudes about inclusion and previous experience in teaching and supervising children with ASD. Not surprisingly, a previous positive experience with inclusion was also positively correlated with a positive attitude towards inclusion. Principals in elementary schools were more likely to recommend higher levels of inclusion than those in middle and high school settings. A surprising finding was that length of service in the same district was negatively correlated with holding the belief that a child with ASD could be successful in the general education classroom. The authors noted that this may be indicative of principals who were educated prior to the inclusion movement (Horrocks et al., 2008).

Finally, in an exploratory study conducted in England, Humphrey and Lewis (2008) examined the effectiveness of inclusive practices for students with ASD in inclusive schools. Semi-structured interviews were conducted with 19 students with ASD, ages 11-17 years, as well as teachers, learning support assistances, Special Educational Needs Coordinators (SENCOs), administrators, and parents. School documents related to inclusion policies as well as IEPs were also examined. The authors concluded a culture of acceptance and valuing diversity permeated from the top down. Staff who reported administrators demonstrated a commitment to inclusion felt supported and better able to meet the needs of their students. Without leadership commitment to inclusive practices, difficulties translating policy to practice were evident. Communication channels between SENCOs and teachers including the provision of in-service

training, sharing IEPs, daily staff bulletins, and a communication book highlighting students' strengths, difficulties, and suggested teaching strategies were also correlated with better student outcomes.

Researchers have stated that attitudes toward inclusion vary as a function of proximity to the implementation of inclusion and, since principals are distal, their attitudes should be more positive (Cook et al., 1999). Therefore, it is also important to consider the opinions of the individuals who are directly responsible for implementing inclusionary practices, general and special education teachers. Teachers' attitudes about inclusion are especially important because research has demonstrated that teachers with more positive attitudes about inclusion and more experience in inclusive setting have higher rates of concern for the success of their included students (Cook, Tankersley, Cook, & Landrum, 2000).

Negative teacher attitudes. In an early review, Scruggs and Mastropieri (1996) presented data from 28 studies on teacher attitudes, published between 1958 and 1995, that included 10,560 teachers and school personnel. Overall, 65% of the participants supported inclusion as a desired practice, but there was less support when the specifics of inclusion were included in questionnaires. Approximately half of the teachers indicated that they would be willing to teach students with disabilities, but only 38% felt that they had the training and the ability to handle the education of students with moderate to severe disabilities. More special education teachers than general education teachers felt that students with disabilities and their typical peers would benefit from inclusionary practices but, interestingly, more general education teachers indicated that they had witnessed students with disabilities benefitting from placement in the general education classroom. With regard to the amount of work inclusion would create for general education teachers, 81% agreed that including a student with special needs would create more work for

them, almost half indicated that they would feel “imposed upon” if they had students included in their classrooms, while only one-third stated that they had the time to complete the extra work that would be required if they had a student with disabilities included in their classroom. Similarly to surveys completed by principals, the majority of general and special education teachers felt that general education teachers did not have sufficient training or expertise to help students with disabilities to be successful when included (Scruggs & Mastropieri, 1996).

In the Cook et al. (1999) study that asked principals about their attitudes toward inclusion, special education teachers were also surveyed. While results indicated that the special education teachers were in agreement with the principals that inclusion was a good practice, attitudes of the two groups differed significantly in other ways. Special education teachers did not feel that general education teachers had the ability to teach students with special needs and therefore felt that they should be heavily involved in the inclusion process. In addition, they felt the achievement of the included students would not increase in general education classrooms. Finally, they felt that resources needed to be protected and allocated to support students with disabilities who are included (Cook et al., 1999).

In a qualitative study, Fuchs (2010) used interviews and direct observation to examine the beliefs and attitudes of five general education teachers about mainstreaming practices. Common challenges reported by the participants included lack of administrative support, lack of support from special educators and support staff, and lack of sufficient preparation in their preservice programs. Specifically, teachers reported lacking adequate planning and collaboration time for mainstreaming. Teachers also unanimously regarded the expectations and job responsibilities of teaching a wide range of learners as unrealistic. In addition to the reported barriers present in their work environments, the teachers agreed that “one required course” in special education for

general educators was insufficient as preservice training and did not prepare them to differentiate instruction, make accommodations in the classroom, or work with special education support staff.

Marks-Wolfson and Brady (2009) examined the attitudes of 199 teachers and how it impacted their beliefs about students with disabilities. The teachers completed the *Teacher Attribution Scale* (Brady & Woolfson, 2008), *Teachers' Sense of Efficacy Scale - Adapted* (Tschannen-Moran & Woolfolk, & Hoy, 2001), *Interaction with Disabled Persons Scale* (Gething, 1991); a brief *COPE* (Carver, 1997), and *Life Orientation Test – Revised (LOT-R;* Scheier, Carver, & Bridges, 1994). Teachers who had high self-efficacy regarding their ability to teach children with special needs were more likely to blame the curriculum or their own teaching abilities for lack of progress by the included student. Additionally, teachers who had more sympathy for students with disabilities were more likely to believe that a lack of learning in the general education classroom was due to factors in the child's control and that those factors would be difficult to change. Finally, the study revealed that teachers who had more training were less likely to view the child as having control over their disability and poor learning (Marks-Wolfson & Brady, 2009).

In a similar study, Santoli, Sachs, Romey, and McClurg (2008) explored the relationship among teachers' beliefs about and experiences with inclusion. An attitudinal survey was completed by 56 educators from an urban middle school mandating full inclusion. A total of 98% of the teacher respondents reported a willingness to make needed adaptations for students with disabilities, but 76.8% did not believe students with disabilities, regardless of severity, could be educated in regular classrooms. Students with behavioral disorders and intellectual disability were widely regarded as inappropriate for inclusion. Similarly, a more recent study by Barned,

Knapp, and Neuharth-Pritchett (2011) found that teachers' attitudes toward the inclusion of young children with ASD was strongly influenced by the perceived severity of the disorder. The authors surveyed 15 preservice teachers and found that two-thirds of respondents believed students with "classic autism" were too impaired to benefit from the activities of a regular school.

While implementing a university-school district partnership, Causton-Theoharis and colleagues (2011) surveyed the teachers and staff regarding their opinions on what made inclusion difficult, and their findings were consistent with the other studies presented here. Teachers stated that they did not have the time to plan for included students nor did they have time to collaborate with other teachers. The teachers indicated that they felt collaboration was necessary for inclusion to be successful, but stated that when actually implemented there was little or no time to achieve the desired level of communication and planning. In addition to the lack of time, teachers who were supportive of the inclusion efforts found the negative attitudes of other teachers to be a detriment to the process. The teachers reported that the negative attitude expressed by some of the teachers made it difficult for the other teachers to stay positive about the process because those teachers did not aide in the process and actually became a hindrance (Causton-Theoharis, Theoharis, Bull, Cosier, & Dempf-Aldrich, 2011).

In a more recent assessment of opinions and attitudes about inclusion, Segall and Campbell (2012) surveyed 196 education professionals, including general education teachers, principals, special education teachers and school psychologists, across 33 schools. The participants completed the *Placement and Services Survey (PASS)*, developed by the authors for the purpose of the investigation and adapted from the *Autism Inclusion Questionnaire* (Segall & Campbell, 2007), which includes five sections: demographic information, knowledge of ASD,

opinions about inclusive education, classroom behaviors, and classroom practices. Across all the participants, general education teachers reported the least positive attitudes towards inclusion. Additionally, general education teachers had less knowledge about ASD, awareness of practice, and use of strategies than special educators and school psychologists. The authors of the study note that these results indicate the need for increased educator training as general and special educators as well as school psychologist and administrators are all responsible for effectively implementing inclusionary practices (Segall & Campbell, 2012).

In one of the most comprehensive studies, Werts, Wolery, Snyder, Caldwell, and Salisbury (1996) surveyed 1,430 elementary education teachers across the U.S. to identify their perceptions related to resources and support needed to include students with disabilities, the availability of resources/support, and to determine if perceptions about the need for and availability of resources/support differed as a function of perceived severity of student disability. Respondents were divided into three groups including (1) teachers with no students with disabilities, (2) teachers with students rated as lower in areas of disability as rated using an adapted *ABILITIES Index* (Simeonsson & Bailey, 1991), and (3) teachers with students rated higher or more severe in areas of disability as per the adapted *ABILITIES Index*. Results indicated more teachers of students with disabilities than teachers of typical students reported needing resources/supports that were not available to them. Further, larger percentages of teachers of students with more substantial needs reported needing resources/supports as compared to teachers of students with less substantial needs. Finally, the discrepancies between the reported need for, and availability of, resources/support were greater for teachers of students with more substantial needs than for teachers of students with less substantial needs.

The authors concluded that these findings suggested teachers' perceptions of their needs for resources/support were related to their ratings of the severity of students' disabilities. Specifically, the more severe the student's perceived disabilities, the greater the discrepancy between teachers' perceived need for, and availability of, support (Werts et al., 1996). The authors argued that discrepancies between teachers' perceived needs for and availability of resources and support may indicate a need for change in how inclusive practices are conceptualized and adopted (Werts et al., 1996). Among the needed resources identified by teachers were increased in-service training at the onset of the school year, regular and ongoing training, opportunities to attend conferences, opportunities to observe other teachers, written information for adapting classrooms, extra money for materials and supplies, and reduced class size. Additional in-class help and time to meet with specialists were also identified as needs by teachers (Werts et al., 1996).

Much of the more recent research on teacher's attitudes regarding the inclusion of students with ASD has been conducted internationally. For example, Lindsay, Proulx, Thomson, and Scott (2013) explored teachers' challenges in and strategies for creating inclusive environments for students with ASD via semi-structured interviews of 13 educators in Ontario, Canada. Purposive sampling was used whereby teachers having at least 2 years of teaching experience in an integrated class working within an elementary school and/or with experience teaching a student with ASD within an inclusive setting were recruited through contacts with a local district school board. The resultant participant sample included one teacher of a developmental disability program, 6 special education teachers, and 6 regular education teachers. All participants reported having inclusive teaching experience. Interviews probed length of teaching experience and training background, experience teaching students with ASD, and

challenges in educating students with ASD in general education classes. The following themes emerged in regard to challenges for including students with ASD: (a) understanding and managing behavior; (b) socio-structural barriers (i.e., school policy, lack of training and resources); and (c) creating an inclusive environment (i.e., lack of understanding from other teachers, students, and parents). No patterns were reported regarding school type (rural versus urban), number of years teaching, grade level of students, or number/types of challenges.

In England, Frederickson, Jones, and Lang (2010) explored the provisions available to students with ASD in inclusive schools with and without a “specialist ASD resource base,” (i.e., similar to Autistic Support programs in the U.S.). The authors explored the strategies that educational professionals who work with students with ASD used school wide and individually, and whether those strategies differed across inclusive vs. ASD resource base settings. Semi-structured interviews were conducted in 26 inclusive schools, 7 with an ASD resource base and 19 without. Participants consisted of 14 Special Educational Needs Coordinators (SENCOs) or senior teachers with special education management responsibilities such as inclusion coordinators, specialist provision teachers, or learning support leaders; 9 class teachers; 6 heads of ASD resource base programs; 6 teacher assistants; and 2 head teachers. To elicit a more detailed account of considerations of and action related to common challenges associated with working with students with ASD, three scenarios were presented to participants: tantrum behavior, bullying, and classroom participation. Results indicated students from schools with an ASD resource base spent between 0% and 100% of their instructional time in inclusion classes, compared to 75-100% for their counterparts from schools without an ASD resource base. The authors noted this may have been attributable to higher mean academic performance levels of students in the latter group. In schools without an ASD resource base, 52.6% of SENCOs and

42.1% of teachers reported receiving ASD-specific training. In schools with an ASD resource base, all SENCOs, heads of ASD resource-base programs, and 86% of mainstream class teachers received ASD-specific training. About half of all respondents reported feeling further training would be useful. Additional desired supports included more funding to facilitate inclusion as well supplementary services (i.e. Speech, Occupational Therapy, and social skills training).

Presence of disruptive behaviors. A final potential barrier to inclusion involves specific child characteristics that can negatively affect their time spent within general education classrooms. One of the most common barriers to general education settings is disruptive behavior, and students who engage in disruptive behavior are at risk for being removed from the general education classroom and being placed in segregated settings (Dunlap, Iovannone, Wilson, Kincaid, & Strain, 2010; Emerson et al., 2001). Disruptive behavior has been shown to interrupt academic progress and impede social functioning, and teachers consider controlling student behavior to be one of the greatest deficits in their skills and training (Baloglu, 2009; Jull, 2008). One of the most common punishments for consistently engaging in disruptive behaviors is removal from the general education classroom (Algozzine & Algozzine, 2007; Jull, 2008). Considering that 64 to 93% of individuals with ASD engage in challenging behaviors, they are at a high risk for exclusion from the general education classroom (McTiernan, Leader, Olive, & Mannion, 2011)

In an effort to understand how students' behaviors affected the teacher's opinions of the student, Cook, Caneron, and Tankersley (2007) collected data from 50 general education teachers who had students with disabilities included in their classroom. The teachers were asked to rate the included students based on their enjoyment in teaching the student, their concern for the student, their preparedness to meet about the student during a last minute meeting, and their

desire to have the student removed from their class. Not surprisingly, students with disabilities who displayed higher rates of problem behaviors were more likely to have a high rejection score and a lower attachment score from the teacher (Cook et al., 2007).

Another study examined the relationship between access to the regular classroom and the behaviors of students with ASD (Yianni-Coudurier, Darrou, Lenoir, Verrecchia, Assouline, Ledesert, Michelon et al., 2008). Data were collected on 77 children with ASD regarding demographics, clinical characteristics using the *Aberrant Behavior Checklist (ABC)*; Aman et al. 1985), ASD symptom severity using the *Child Autism Rating Scale (CARS)*; Schopler et al. 1986), and adaptive behaviors using the *Vineland Adaptive Behavior Scale (VABS)*; Sparrow et al. 1984). In addition to child characteristics, data were also collected on the number of hours spent in the regular education classroom and the segregated setting. The analysis of the data revealed that the only significant factors related to hours spent in the inclusion setting were symptom severity and three areas on the *ABC*: uncooperativeness, stereotype/self-injury behaviors, and hyperactivity (Yianni-Coudurier et al., 2008).

Lee, Soukup, Little, and Wehmeyer (2009) used direct observation to determine student and teacher variables that impacted students' access to the general education curriculum. A total of 19 elementary students with disabilities in kindergarten through 6th grade were observed using the *Access Code for Instructional Structures and Student Academic Response (Access CISSAR)*. The *Access CISSAR* is an expanded version of the direct observational system *MainStream Version of the Code for Instructional Structure and Student Academic Response (MS-CISSAR)*; Carta, Greenwood, Shulte, Arreaga-Mayer, & Terry, 1988). Two factors that significantly predicted student access to general education were students' competing responses and teacher management. Students' competing responses were defined as behaviors that were unacceptable

in the academic setting including aggression, disruption, talking inappropriately, noncompliance, looking around, and self-stimulation and abusive behavior. Teacher management was defined as behaviors that were classroom management activities including verbal directives and nonverbal prompts. Results indicated that students who engaged in high rates of disruptive and off-task behaviors were less likely to have access to the general education curriculum than students with lower levels of these behaviors. In addition, students with disabilities who were included in the classroom of a teacher who had lower classroom management abilities were less likely to have access to the general education classroom than those in classrooms with teachers who had higher levels of classroom management skills (Lee et al., 2009).

Given that disruptive behavior is one of the primary reasons students with ASD are excluded from general education, some researchers have examined teachers' self-efficacy and ability to manage disruptive behaviors. For example, in an attempt to measure general education teachers' perceptions about behavior management and intervention strategies, Tillery, Varjas, Meyers, and Smith-Collins (2010) recruited and interviewed 20 kindergarten and 1st-grade teachers. The interviews revealed that some teachers believed that disruptive behaviors were due to within-child characteristics and that teachers had little ability to change or prevent the behavior. One concerning trend that was discovered in the interviews was that almost all of the teachers lacked training in behavior management. The majority stated that their college training had no specific classes in behavior management; rather, it was briefly discussed as part of another class. Many of the teachers acknowledged that their schools attempted to provide them with training, but it usually only occurred after it was identified that there was a need for such training. For example, one teacher stated that one year she had multiple students with behavior

problems included in her class, and after a few months, the administration acknowledged that she needed some support so they hired an outside consultant (Tillery et al., 2009).

Finally, Yianni-Coudurier et al. (2008) explored links between characteristics of children with ASD and their weekly hours of regular-classroom inclusion versus intervention in specialized settings. A total of 77 children with ASD, ranging in age from 3 to 5 years old, served as participants. Results indicated that the number of hours of inclusion was influenced by the children's behavioral and adaptive characteristics including hyperactivity and withdrawal. It is clear from the research that disruptive behavior, as well as other difficulties with social interactions, communication impairments, and repetitive behaviors that often characterize students with ASD, may serve as significant barriers to inclusion (Myers, Ladner, & Koger, 2011; Guralnick, Neville, Hammond, & Connor; 2008). Perhaps many educators have limited access to and/or training in effective evidence-based strategies for supporting students with ASD in general education classrooms.

Evidence-Based Practices for Supporting Students with ASD

The debate over whether to involve students with disabilities, including those ASD, in general education has been resolved by recent litigation. What remains, however, is the question of *how* to include these students in general education classrooms. Increasing prevalence rates and the pervasive social, communication, and behavioral needs of these students make this a critical issue for educators. Students with ASD require numerous specialized supports that many otherwise-skilled general education teachers feel ill-equipped to provide (Crosland & Dunlap, 2012; Horrocks et al., 2008). Few models and procedures for facilitating the successful inclusion of students with ASD exist to guide educators. Consequently, teachers are often left to haphazardly develop programs in the absence of clear protocols (Horrocks et al., 2008).

Although a multitude of interventions are available to address the social, communication, and behavior difficulties associated with ASD, not all are efficacious and/or safe. Educators have a legal and ethical obligation to provide supports that are established by empirical research as safe and effective, otherwise known as evidence-based practices.

The National Autism Center's (NAC) National Standards Project, completed in 2009, is perhaps the most well-established and comprehensive resource identifying the strength of evidence supporting a range of interventions targeting key characteristics of ASD including social skills deficits, language impairments, and challenging behaviors (NAC, 2009). A team of 45 autism experts who specialize in treatment and/or applied research developed the conceptual model for critically evaluating 775 studies that spanned a 50-year period. Treatments were classified as "Established" if a sufficient number of high quality studies had been published to determine they produced beneficial outcomes; "Emerging" if one or more studies suggested they produced beneficial outcomes but not enough studies clearly demonstrated this effect; and "Unestablished" if no studies were published, or if published studies received poor ratings with regard to treatment effects. A fourth category was developed for "Ineffective or Harmful," treatments but no treatments met this criterion. Eleven "Established" interventions were identified including Antecedent Package, Behavioral Package, Comprehensive Behavioral Treatment for Young Children (CBTYC), Joint Attention, Modeling, Naturalistic Teaching Strategies, Peer Training Package, Pivotal Response Treatment, schedules, self-management, and Story-based Intervention Package. More recently, the National Professional Development Center (NPDC) on Autism Spectrum Disorders reviewed 456 articles published between 1990 and 2011 and identified 24 focused intervention practices meeting criteria for evidence-based (Wong, Odom, Hume, Cox, Fettig, Kucharczyk, Brock, Plavnick, Fluery, & Shultz, 2014) A description

and comparison of the empirically-based interventions identified by these two reports is provided here.

Antecedent Package interventions are well established as effective for increasing a wide range of skills including communication, social, and interpersonal as well as reducing problem behaviors (NAC, 2009). These interventions involve modifying situational events that precede the occurrence of a behavior to increase the likelihood of success or reduce the likelihood of problem behavior occurring (NAC, 2009). Derived from the fields of Applied Behavior Analysis (ABA), behavioral psychology, and positive behavior supports (NAC, 2009), Antecedent Package interventions include behavior chain interruption for increasing desired behaviors; behavioral momentum; choice; contriving motivational operations; cueing and prompting/prompt fading procedures; environmental enrichment; environmental modification of task demands; social comments; adult presence; intertrial interval, seating, familiarity with stimuli; errorless learning; errorless compliance; habit reversal; incorporating echolalia, special interests, thematic activities or ritualistic activities into tasks; maintenance interspersal; noncontingent access; noncontingent reinforcement; priming; stimulus variation; and time delay. Antecedent-Based Interventions are also included among the 27 evidence-based practices identified by the NPDC (Odom et al, 2014). According to Wong et al. (2014), these interventions, which include prompting and time delay procedures, meet evidence-based criteria across the preschool, elementary, and middle/high school age groups and are effective for addressing social, communication, behavior, play, school-readiness, academic, motor, and adaptive skills.

Behavioral Package interventions are also well-established as effective for reducing problem behavior and teaching functional alternative behaviors or skills. Similar to Antecedent Package interventions, Behavior Package interventions are derived from the fields of ABA,

behavioral psychology, and positive behavior supports. Interventions cited by NAC (2009) include the following: targeting verbal operants; behavioral sleep package; behavioral toilet training/dry bed training; chaining; contingency contracting; contingency mapping; delayed contingencies; differential reinforcement strategies; discrete trial teaching; functional communication training; generalization training; mand training; noncontingent escape with instructional fading; progressive relaxation; reinforcement; scheduled awakenings; shaping; stimulus-stimulus pairing with reinforcement; successive approximation; task analysis; and token economy. In addition, multicomponent packages including behavioral procedures are included in this category. Behavioral procedures and interventions are also cited as evidence-based by the NPDC including the following: differential reinforcement of alternative, incompatible, or other behaviors (DRA/I/O); discrete trial teaching; extinction; functional behavior assessment (FBA); reinforcement; and task analysis. According to Wong (2014), DRA/I/O is established as effective for preschoolers (3-5 years) to young adults (19-22 years) with ASD to address social, communication, behavior, joint attention, play, school-readiness, motor, and adaptive skills. Discrete trial teaching, a one-to-one instructional approach used to teach skills in a systematic manner, is established as effective for students from early childhood through elementary school at all ability levels (NPDC, 2014). This instructional approach has been used effectively to address social, communication, behavior, joint attention, school-readiness, academic, adaptive, and vocational skills (Wong, 2014). Extinction is described as a strategy used to eliminate unwanted behavior by withdrawing or terminating the positive reinforcer maintaining the inappropriate interfering behavior and is supported for use with preschool, elementary, and middle school ages (Wong, 2014). This intervention has been effective for addressing communication, behavior, school-readiness, and adaptive skills of preschoolers (3-5y years) to

high school-age learners (15-18 years) with ASD. Functional Behavior Assessment (FBA) is a systematic method for determining the underlying function or purpose of a behavior so that an effective behavior support plan may be developed (Wong, 2014). FBAs are effective for all age groups to decrease inappropriate behavior and teach or increase appropriate alternative behaviors across a variety of settings (Wong, 2014). Reinforcement, defined as a consequence that increases the probability that a behavior will occur in the future, is a fundamental practice almost always used in conjunction with other evidence-based practices such as prompting, time delay, functional communication training, and differential reinforcement of other behaviors (Wong, 2014). This intervention has been effective for addressing social, communication, behavior, joint attention, play, cognitive, school-readiness, motor, adaptive, and vocational skills across all age groups (toddlers to young adults).

Comprehensive Behavioral Treatment for Young Children (CBTYC), also referred to as ABA or behavioral inclusive programs and early intensive intervention, are programs that involve a combination of applied behavior analytic procedures such as discrete trial training or incidental teaching delivered to children generally under the age of 8 in a variety of settings and involve a low teacher-to-student ratio (NAC, 2009). All studies included in this category targeted the defining symptoms of ASD, included treatment manuals, provided treatment with a high degree of intensity, and measured overall program effectiveness. Although the NPDC did not review comprehensive treatment models, components of the CBTYC overlap with many NPDC-identified practices including discrete-trial teaching. The beneficial outcomes of these interventions for developing communication and social skills as well as improving behavior outcomes of individuals with ASD have been substantiated by a large body of literature (NAC, 2009; Wong, 2014).

Joint Attention interventions are also established as efficacious for treating communication deficits of individuals with ASD (NAC, 2009). The interventions involve developing foundational skills deemed critical in regulating the behaviors of others (NAC, 2009). Typically, joint attention entails teaching an individual to respond to the nonverbal social bids of others or to initiate joint attention interactions and includes pointing to objects, showing items to another person, and following eye gaze (NAC, 2009). The NPDC considers joint attention to be an outcome rather than intervention but components of joint attention overlap with many NPDC-identified practices such as modeling and reinforcement.

Modeling has received considerable attention in the research and is regarded as established as a treatment for communication deficits exhibited by individuals with ASD. These interventions involve an adult or peer demonstrating a target behavior to be imitated by the individual with ASD (NAC, 2009). Target behaviors may be simple or complex (NAC, 2009). Modeling is often combined with other strategies such as prompting and reinforcement and may be performed in-vivo (live) or via video (NAC, 2009). The NPDC identified modeling, including video modeling wherein video recordings and display equipment provide a visual model of the targeted skill, as meeting evidence-based criteria for toddlers (0-2 years) to young adults (19-22) with ASD (Wong, 2014). Modeling can be used effectively to address a wide range of skill deficits including social, communication, joint attention, play, school-readiness, academic, and vocational (Wong, 2014).

Naturalistic Teaching Strategies use primarily child-directed interactions to teach functional skills and are conducted in naturally occurring settings such as schools, home, and community settings (NAC, 2009; Koegel, 2000). Naturalistic approaches involve the inclusion of specific motivational procedures, meeting the child at their level and interests, increasing

opportunities for child-initiated expressive language, and incorporating parents, teachers and peers as therapists (Koegel, 2000). Examples cited by NAC (2009) include focused stimulation, incidental teaching, milieu teaching, embedded teaching, and responsive education and prelinguistic milieu teaching. The NPDC defines Naturalistic Interventions as practices such as environmental arrangement, interaction techniques, and applied behavior analytic strategies designed to encourage specific target behaviors based on learners' interests (Wong, 2014). These interventions are effective for addressing social, communication, behavior, joint attention, play, and academic skills of toddlers (0-2 years) to elementary school-age learners (6-11 years) with ASD (Wong, 2014).

Peer Training packages, also commonly referred to as peer networks, circle of friends, buddy skills package, Integrated Play Groups, peer initiation training, and peer-mediated social interactions, involve teaching typically developing children strategies for facilitating social interactions with children with ASD (NAC, 2009). Although the interpersonal and play skills are the most common targets of these interventions, they are also regarded as “Established” for increasing communication skills of individuals with ASD (NAC, 2009). The NPDC reports this intervention has proven effective for addressing social, communication, joint attention, play, school-readiness, and academic skills of preschoolers (3-5 years) to high school-age learners (15-18) with ASD (Wong, 2014).

Pivotal Response Treatment, also referred to as PRT, Pivotal Response Teaching, and Pivotal Response Training, focuses on targeting “pivotal” behavioral areas such as motivation to engage in social communication, self-initiation, self-management, and responsiveness to multiple cues, with the goal of widespread and fluently integrated ancillary improvements (NAC, 2009). Parent involvement is a key aspect of PRT, as is implementation in natural environments such as

homes and schools with the goal of achieving generalized improvements (NAC, 2009). The NPDC reports this intervention has been effective for toddlers (0-2 years) to middle school-age learners (12-14 years) to address social, communication, joint attention, and play skills (Wong, 2014).

Schedules involve the presentation of a task list that communicates a series of activities or steps required to complete an activity (NAC, 2009). These interventions may take several forms including written words, pictures, photographs, or work stations and are often used in conjunction with other evidence-based practices such as reinforcement (NAC, 2009). The NPDC identified Visual supports, or concrete cues that provide information about an activity, routine, or expectation and/or support skill demonstration, as evidence-based (Wong, 2014). According to the NPDC, these supports are commonly used to organize learning environments; establish expectations around activities, routines, or behaviors (e.g. visual schedules, visual instructions, structured work systems, scripts, power cards); provide cues or reminders; and provide preparation and instruction (Wong, 2014). This intervention has proven effective for addressing social, communication, behavior, play, cognitive, school-readiness, academic, motor, and adaptive skills of individuals with ASD of all ages (0-22 years).

Self-management involves teaching individuals with ASD to self-regulate by recording the occurrence/nonoccurrence of a target behavior and securing reinforcement (NAC, 2009). Common components of this intervention include goal-setting, reinforcement, checklists, counters, visual prompts, and tokens (NAC, 2009). According to the NPDC, self-management is often used with other evidence-based practices such as modeling, video modeling, and visual supports (Wong, 2014). This intervention is effective for addressing social, communication,

behavior, play, school-readiness, academic and vocational skills and is supported for use among preschoolers (3-5 years) to young adults (19-22 years) with ASD (Wong, 2014).

Story-based Interventions involve a written description of situations in which specific behaviors are expected to occur and may include prompting, reinforcement, and discussion (NAC, 2009). Social Stories, which seek to answer the “who,” “what,” “when,” “where,” and “why” in order to improve perspective-taking, are the most popular story-based interventions (NAC, 2009). Consistent with story-based interventions, the NPDC identifies Social Narratives as evidence-based. These interventions describe social situations while highlighting relevant cues and offering examples of appropriate responding with the goal of helping learners to adjust to changes in routine and adapt their behaviors based on the social and physical cues of a situation or to teach specific social skills or behaviors (Wong, 2014). These interventions have proven effective for addressing social, communication, behavior, joint attention, play, school-readiness, academic, and adaptive skills of preschoolers (3-5 years) to high school-age learners (15-18 years) with ASD (Wong, 2014).

Summary

There have been both legal and philosophical shifts away from segregated special education toward more inclusive education for students with ASD. However, a lack of clear guidelines for educating students with ASD in these inclusive settings, as well as other attitudinal and system-level barriers, challenge effective inclusion of these students.

The success of inclusion hinges largely upon the availability and quality of support provided (Farrell, 2004). Principals’ attitudes as well as perceptions of teachers’ skills, training, and experience are positively correlated with student placement in the LRE (Praisner, 2003; Horrocks, 2008; Cook et al. 1999; Barnett & Monda-Amaya, 1998). Likewise, teacher attitudes

regarding the appropriateness of inclusion and support needed to ensure meaningful participation of students with ASD in the general education setting is paramount. Although research indicates teachers' attitudes toward inclusion are generally positive, factors such as severity of disorder and availability of resources may preclude their support. Specifically, students with significant behavior problems and cognitive delays are often deemed inappropriate for general education learning environments (Emerson et al. 2001; Algozzine & Algozzine, 2007; Santoli, Sachs, Romey, & McClurg, 2008; Jull, 2008; Lee, Soukup, Little, & Wehmeyer, 2009; Dunlap, Iovannone, Wilson, Kincaid, & Strain, 2010; Barned, Knapp, & Neuharth-Pritchett, 2011). Perceptions of problem behaviors have been found to be positively correlated with teacher rejection and negatively correlated with teacher attachment (Cook et al., 2007). Teachers also report a need for protection and allocation of resources to ensure meaningful outcomes for students in inclusive education (Cook et al, 1999; Werts et al., 1996; Causton-Theoharis et al., 2011). Research on perceptions related to inclusion also indicates teachers feel inadequately trained in behavior management and intervention strategies necessary to ensure meaningful outcomes for students participating in mainstream activities (Tillery, Varjas, Meyers, & Smith-Collins, 2010).

A willingness and ability of systems to draw on experts in ASD and behavior analysis, as well as the provision of adequate resources and social support to teachers responsible for implementing effective inclusion strategies, is pivotal. Unfortunately, general education teachers may lack the motivation and skills needed to effectively include students with ASD in their classrooms because, historically, special education teachers have been primarily accountable for the educational programming of these students. In addition, including students with ASD in general education settings requires additional teacher planning time to allow teachers to

individualize supports, plan alternative or additional activities, and develop individualized instructional methods appropriate to the students' needs (Simpson, Boer-Ott, & Smith-Myles, 2003). Students with ASD also require higher levels of teacher-student interaction and classroom structure than their typical peers, thus smaller class sizes are deemed optimal but not always feasible (Simpson, Boer-Ott, & Smith-Myles, 2003). Overcoming these potential obstacles requires a coordinated team commitment. Shared responsibility and decision making among general educators, special educators, and support personnel is fundamental to the successful inclusion of students with ASD (Simpson, Boer-Ott, & Smith-Myles, 2003).

Further compounding these challenges of including students with ASD is the lack of research prescribing procedures to do so effectively. While several evidence-based practices have been identified to support students with ASD, the specific use of these practices for supporting inclusion efforts has not been established in the literature. Furthermore, while available data systems may report the total number of students with ASD participating in inclusion, the quality of these experiences remains unknown. Additionally, teachers' perceived needs for support has not been sufficiently researched.

Special education legislation, most notably IDEA (2004), mandates that all educators implement evidence-based educational programs and that students with disabilities be educated in the least-restrictive environment. The increase in prevalence of students with ASD along with legislative push towards inclusive education necessitate the examination of supports and services available and provided to facilitate the inclusion of students with ASD in the general education curriculum. Ensuring students with ASD have access to the myriad of learning and social opportunities available in the general education curriculum poses unique challenges. The pervasive academic, behavioral, and social needs characteristic of students with ASD coupled

with the lack of procedural guidelines available to educators for effectively including them in general education settings make this a daunting, albeit critical, task (Horrocks et al., 2008). The purpose of the present investigation is to examine special and general education educators' use of and training needs related to evidence-based practices, as well as perceptions of the availability of and training needs related to staff support for including students with ASD in inclusive classroom settings. This study aims to extend the findings of Werts et al. (1996) to identify current supports and services available and desired to meaningfully include students with ASD in Pennsylvania public schools. It is hoped that the results of this study will serve to produce professional development objectives that facilitate the inclusion of students with ASD in the general education curriculum.

CHAPTER 3

Method

Participants

The participant sample for this investigation was drawn from public elementary, middle, and high school teachers who taught during the 2015-2016 school year in Pennsylvania. As the purpose of this study was to survey teachers' perceptions of inclusive education for students with ASD, teachers employed in the following types of educational facilities were excluded from the sample: (a) juvenile correctional centers, (b) alternative schools, (c) special education schools, (d) schools for gifted and talented children only, and (e) virtual schools. Teachers who reported working in these facilities were automatically advanced to the end of the survey.

Procedure

Upon obtaining IRB approval to conduct the investigation, an e-mail (see Appendix A) containing a brief description of the study and link to access the survey was sent to 11 Intermediate Unit Training and Consultation (TaC) Supervisors, with a request to forward the e-mail to special and general education teachers in 196 school districts across the central region of Pennsylvania. A reminder e-mail was sent a week following the initial request, followed by a second reminder e-mail the following week. Due to low initial response rate, the same e-mail describing the study and including a link to access the survey was sent to 15 randomly selected charter schools in the state of Pennsylvania as well as to Lehigh University School Psychology alumni via the Information Systems Team e-mail list. An a priori power analysis was conducted using G*Power, a free software program that provides effect size calculators for various statistical tests (Faul, Erdfelder, Lang, & Buchner, 2007) which determined a minimum sample size of 228 teachers necessary to achieve a power of .80 and small effect size ($f^2 = .05$).

A web survey format using Qualtrics was used in this study to increase ease of access for teachers. This permitted teachers to exit at any time during the survey if discontinued participation in the study was desired. Consent to participate was obtained on the first page of the survey with participants clicking “yes” to enter and “no” to exit the survey. Confidentiality of survey responses was strictly maintained. No identifying information was requested from or reported by respondents.

Incentives for participation were offered to respondents. Specifically, the first 20 teachers to respond and every 10th participant after, to a maximum of 30 additional respondents, were sent a \$10 VISA gift card. In addition, following completion of the study, a summary of the survey findings were e-mailed to all Intermediate Unit TaC Supervisors to distribute to all teachers. At the conclusion of the survey, teachers were provided a brief message thanking them for their participation and reminding them of their eligibility for incentives with instructions for consideration of eligibility.

PA Inclusive Practices for ASD Survey

The *PA Inclusive Practices for ASD (PAIP-ASD) Survey* (see Appendix B) was developed by the investigator to gather information regarding (a) the extent to which students with ASD are participating in the general education curriculum alongside typical peers, (b) the use of evidence-based practices by educators to support the inclusion of students with ASD in general education settings, (c) educators’ training in these practices for supporting the inclusion of students with ASD, (d) educators’ interest in receiving training for each evidence-based strategy, (e) the availability of staff support to facilitate the inclusion of students with ASD, and (f) the perceived need of staff support to include students with ASD. The content of the initial version of the survey was derived from relevant literature (Werts et al., 1996; NAC, 2009;

Wong, 2014). However, prior to being finalized, the survey was piloted with a professional panel of consultants, blind to the purpose of this investigation, who currently provide professional development training and technical assistance to schools, parents, educators, students, and administrators on educational initiatives established by Pennsylvania Department of Education Bureau of Special Education. Two doctoral-level Educational Consultants, one doctoral-level Research Psychologist, and four masters-level Educational Consultants served as the professional panel. Two of the panelists are certified School Psychologists, one is a Speech-Language Pathologist, one is a Board Certified Behavior Analyst, and four were previously employed as teachers. Recommendations made by this group of experts were incorporated into the final version of the survey.

The first section of the *PAIP-ASD Survey* requests consent for voluntary participation. The purpose of the survey is briefly described and assurance of confidentiality and anonymity are provided. Respondents were able to either consent to participate and proceed to the survey by selecting “enter” or decline participation and exit the survey by selecting “exit.”

The second section of the *PAIP-ASD Survey* gathers demographic information from teacher respondents including position (general education or special education teacher), the education setting in which the respondent currently works, the county in which the respondent teaches, highest degree earned and endorsements obtained, years of teaching experience, grade levels taught, total number of students with ASD currently taught by the respondent, severity of ASD with which the educator’s students currently present based on DSM-5 diagnostic criteria and needed support (minimal support, support, substantial support), and training received on teaching students with disabilities in inclusive classrooms. Respondents were asked to rate how

adequately they feel they have been trained to teach students with ASD on a 5-point Likert scale, with 1 indicating “not at all” and 5 indicating “very.”

Section 3 of the *PAIP-ASD Survey* explores teacher reports of the involvement of students with ASD in everyday school activities (i.e., general education academic classes, physical education classes, extracurricular activities, assemblies, social events, school performances, sporting events, lunch, recess, homeroom, and community-based instruction). Teachers were asked to select the activities available at their school and then rate on a 5-point Likert scale the extent to which students with ASD are participating in these activities alongside peers without disabilities, with 1 indicating “not at all” and 5 indicating “always” involved.

Section 4 of the *PAIP-ASD* survey assesses teachers’ perceptions of strategies for supporting the inclusion of students with ASD. Evidence-based strategies derived from the literature were briefly defined and include antecedent package, behavioral package, Comprehensive Behavioral Treatment for Young Children, Joint Attention, Modeling, Naturalistic Teaching, Peer Training Package, Pivotal Response Treatment, Schedules, Self-Management, and Story-Based Interventions (NAC, 2009; Wong et al., 2014). Teachers were asked to indicate the availability of each evidence-based practices in their school and then rate the extent to which they have used each strategy to support the inclusion of students with ASD on a 5-point Likert scale with 1 indicating “not at all” and 5 indicating “always,” as well as the perceived need for each strategy to facilitate the inclusion of students with ASD on a 5-point Likert scale, with 1 indicating “not at all” and 5 indicating “very” needed.

Section 5 of the *PAIP-ASD Survey* explores teachers’ perceptions of supports and resources available and needed to support the inclusion of students with ASD including: adequate planning time; resources such as materials and money to implement inclusion plans;

support from the Principal; and consultation with school administrator, school psychologist, guidance counselor, special education teacher, general education teacher, related service providers; medical or mental health agencies; Pennsylvania's Training and Technical Assistance Network (PaTTAN); intermediate unit; and family/parent. Teachers were asked to check all supports made available to them to facilitate the inclusion of students with ASD. Teachers were furthermore asked to indicate on a 5-point Likert scale the extent to which the supports have been used and the extent to which each support is needed to facilitate the inclusion of students with ASD, with 1 indicating "not at all" and 5 indicating "always" or "very," respectively.

Design and Data Analysis

An ex post facto descriptive research design was used for this investigation. Descriptive research designs use quantitative analysis to carefully describe educational phenomena (Gall, Borg, & Gall, 1996). In the context of this study, ex post facto refers to the assumption that participants' perceptions are already formed and no attempt to influence these perceptions will be made by the investigator. Teacher responses on the *PAIP-ASD Survey* served as the dependent variable.

Statistical Package for Social Sciences (SPSS) version 24 was used to aid in the storage, organization, and analysis of data. Descriptive statistical analyses (frequencies, percentages, means, and ranges) were used to examine respondent demographic characteristics including position, years of experience, level of education, grade levels taught, and training experiences.

Descriptive statistical analysis (frequencies, means, percentages and standard deviations) were also used to analyze research question 1 involving the extent to which students with ASD are reportedly participating alongside peers without disabilities in each of the following activities: general education classes, physical education classes, extracurricular activities or

clubs, assemblies, social events, school performances, lunch, recess, homeroom, and community-based instruction.

Research question 2 was also analyzed using descriptive statistical analysis (frequencies, percentages, mean and standard deviations) to examine Pennsylvania educators' reported adequacy of training to teach students with ASD. On the 5-point Likert scale, scores of 1 and 2 indicated a lack of adequacy, whereas scores of 4 and 5 indicated adequacy of training to teach students with ASD.

Research question 3a explored the availability of evidence-based strategies to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies and percentages) were used to examine availability of each of the 11 evidence-based strategies cited.

Research question 3b explored the extent to which Pennsylvania educators have used evidence-based strategies to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies, percentages, means and standard deviations) were used to examine the extent to which each of the 11 evidence-based strategies were reportedly used by Pennsylvania educators to facilitate the inclusion of students with ASD. Ratings ranged from 1 to 5, with scores of 1 and 2 indicating low usage and ratings of 4 and 5 indicating high usage of each strategy.

Research question 3c explored the reported need for evidence-based strategies to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies, mean, and range) were used to examine the extent to which each of the 11 evidence-based strategies were reportedly needed by Pennsylvania educators to facilitate the inclusion of students with ASD. Ratings ranged from 1 to 5, with scores of 1 and 2 indicating low need and ratings of 4 and 5 indicating high need for each strategy.

Research question 3d examined differences in perceived need for evidence-based strategies to facilitate the inclusion of students with ASD based on student support needs (minimal as compared with substantial support needs, specifically). An independent t-test was used to examine group differences based on student need (level 1 or 3) on reported need for each of the 11 evidence-based strategies.

Research question 4a examined the availability of staff supports to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies, percentages, means, and standard deviations) were used to examine availability of each of the 18 staff supports cited.

Research question 4b explored Pennsylvania educators' use of staff supports to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies, means, and ranges) were used to examine the extent to which each of the 18 staff supports are reportedly used by Pennsylvania educators to facilitate the inclusion of students with ASD. Ratings ranged from 1 to 5, with scores of 1 and 2 indicating low usage and ratings of 4 and 5 indicating high usage of each strategy.

Research question 4c examined Pennsylvania educators' perceived need for staff supports to facilitate the inclusion of students with ASD. Descriptive statistical analyses (frequencies, means, and ranges) were used to examine the extent to which each of the 18 staff supports were reportedly needed by Pennsylvania educators to facilitate the inclusion of students with ASD. Ratings ranged from 1 to 5, with scores of 1 and 2 indicating low need and ratings of 4 and 5 indicating high need for each strategy.

Finally, research question 4d examined differences in perceived need for staff supports to facilitate the inclusion of students with ASD based on student support needs (specifically minimal as compared to substantial support needs). Independent t-tests were used to examine

group differences based on student need (level 1 or 3) on reported need for each of the 18 staff supports cited.

CHAPTER 4

Results

Demographic Characteristics

A total of 312 respondents completed the *PA Inclusive Practices for ASD Survey*. Of these, 17 respondents who self-identified as Administrator were excluded. The final dataset was comprised of 295 educators. The demographic characteristics for the participants are shown in Table 1 below.

General education and special education teachers were equally represented in this data set (147 and 148, respectively). Years of teaching experience ranged from less than 1 year to more than 10 years with an average of 9 years reported across participants. A majority of participants reported Master's Degree as the highest level of education obtained (74%). A number of participants indicated teaching multiple grades ranging from kindergarten to 12+ with the fewest reportedly teaching 7th grade (10% of respondents) and most teaching kindergarten (36% of respondents). Only one participant indicated teaching at the pre-kindergarten level. A majority of participants indicated teaching between 1 and 5 students with ASD (71% of respondents). Nearly half of participants indicated teaching students with support needs (level 2). Teachers of students with minimal support needs (level 1) and substantial support needs (level 3) represented 26% and 28% of the participant sample, respectively. Participants reported multiple training experiences on teaching students with ASD in inclusive (regular) classrooms. The most common experiences reported by participants were in-service training (72% of respondents), on-the-job training (65% of respondents), and conferences (45% of respondents). Only 23% of respondents reported university training and 4% reported receiving no training. Participants represented 20 of the 67 counties listed with most reportedly working in the southeastern and central regions of the state.

Table 1. *Demographic Characteristics of Participants*

Characteristics	f	%	M	Range
Position				
General Education Teacher	147	47		
Special Education Teacher	148	47		
Years of Teaching Experience				
<1	3	1	9	11
1	1	<1		
2	6	2		
3	14	4		
4	15	5		
5	14	4		
6	9	3		
7	21	6		
8	30	9		
9	40	12		
10	34	10		
>10	81	25		
Level of Education				
Bachelor's Degree	26	8		
Master's Degree	241	74		
Specialist Degree	3	1		
Grades Taught				
Pre-K	1	<1		
K	97	36		
1	93	35		
2	83	31		
3	81	30		
4	53	20		
5	52	19		
6	30	11		
7	26	10		
8	31	12		
9	61	23		
10	55	21		
11	59	22		
12	54	20		
12+	39	15		

Characteristics	f	%	M	Range
Number of Students with ASD				
0	7	3		
1-5	190	71		
6-10	50	19		
11-14	17	6		
15+	2	1		
Student Level of Support Need				
Minimal	69	26		
Support	120	46		
Substantial	74	28		
Training Experience				
None	11	4		
In-Service	191	72		
On-the-Job	174	65		
Conferences	119	45		
University Training	60	23		
Other	9	3		
County				
Allegheny	7	4		
Armstrong	1	<1		
Beaver	1	<1		
Berks	4	2		
Blair	3	2		
Cambria	18	11		
Carbon	26	15		
Centre	24	14		
Chester	1	<1		
Clinton	1	<1		
Cumberland	6	4		
Dauphin	9	5		
Elk	1	<1		
Lancaster	1	<1		
Lebanon	1	<1		
Lehigh	7	4		
Mckean	1	<1		
Monroe	8	5		
Montgomery	37	22		
Northampton	11	7		

Participation in Inclusive Activities

Descriptive analyses including frequencies, means, and ranges (see Table 2) were used to examine the extent to which students with ASD were reportedly participating alongside peers without disabilities in each of the following activities: general education classes, physical education classes, extracurricular activities or clubs, assemblies, social events, school performances, lunch, recess, homeroom, and community-based instruction.

Teachers reported students with ASD participate alongside typical peers almost always in lunch ($M=4.74$, $SD= 0.62$) and very often in assemblies ($M= 4.08$, $SD= 0.72$) and recess ($M= 4.11$, $SD= 1.5$). Teacher ratings indicated students with ASD sometimes participate alongside typical peers in general education academic classes ($M= 3.26$, $SD= 1.06$), physical education classes ($M= 3.63$, $SD= 1.17$), extracurricular activities or clubs ($M= 3.31$, $SD= 1.02$), social events ($M= 3.83$, $SD= 1.02$), school performances ($M= 3.78$, $SD= 1.03$), sporting or athletic events ($M= 3.17$, $SD= 1.07$), and community-based instruction ($M= 2.89$, $SD= 1.00$).

Based on the 2015 report published by the U.S. Department of Education, National Center for Education Statistics (U.S. Department of Education, 2015), it was hypothesized that Pennsylvania educators would report fewer than half of students with ASD are participating alongside peers without disabilities full time, or in 80% or more of school activities. These findings support the hypothesis that Pennsylvania educators report students with ASD are participating together with peers without disabilities less than full time (80% or more of school activities). Results indicate students with ASD are participating alongside typical peers very often or always in 7 of 11 school activities, or 64%.

Table 2. *Frequencies and Percentage Participation of Students with ASD in Inclusive Activities*

Activity											M	SD
	Not at All (1)		Rarely (2)		Sometimes (3)		Very Often (4)		Always (5)			
	f	%	f	%	f	%	f	%	f	%		
General Education Academic	15	5	38	12	113	35	60	18	39	12	3.26	1.06
Physical Education Classes	15	5	38	12	42	13	104	32	66	20	3.63	1.67
Assemblies	0	0	3	1	49	15	136	42	77	24	4.08	0.72
Extracurricular Activities	18	6	22	7	118	36	75	23	32	10	3.31	1.02
Social Events	10	3	13	4	63	19	104	32	74	23	3.83	1.02
School Performances	7	2	26	8	54	17	108	33	69	21	3.78	1.03
Sporting/Athletic Events	21	6	38	12	108	33	64	20	30	9	3.17	1.07
Lunch	0	0	4	1	13	4	31	10	217	66	4.74	0.62
Recess	38	12	5	2	12	4	20	6	163	50	4.11	1.50
Homeroom	28	9	12	4	81	25	68	21	71	22	3.55	1.24
Community-Based Instruction	24	7	14	4	96	29	28	9	8	2	2.89	1.00

Adequacy of Training for Inclusion

Descriptive analyses that included frequencies, percentages, means, and standard deviations (see Table 3) were used to examine educators' reported adequacy of training to teach students with ASD. Scores of 1 and 2 indicated a lack of adequacy, whereas scores of 4 and 5 indicated adequate training for facilitating the inclusion of students with ASD.

Consistent with previous research, Pennsylvania educators reported sub-adequate training to teach students with ASD (M= 2.86, SD= 0.90; Scruggs & Mastropieri, 1996; Werts et al., 1996; Fuchs, 2010). Only 17% of teacher respondents indicated adequate training to teach students with ASD.

Table 3. *Frequencies of Teachers' Perceived Adequacy of Training to Teach Students with ASD*

Rating	f	Percentage	M	SD
			2.86	0.90
1 (Not at All)	8	2		
2	90	28		
3 (Somewhat)	118	36		
4	39	12		
5 (Very)	15	5		

Evidence-based Strategies to Facilitate Inclusion

Availability of evidence-based strategies. Descriptive analyses including frequencies and percentages (see Table 4) were used to examine availability of each of the 11 evidence-based strategies cited. Consistent with previous research, a variety of evidence-based strategies were reported available by Pennsylvania educators (Hess, 2008). Modeling, Schedules, Antecedent Package, and Self-Management were most often reported available by 96%, 94%, 87% and 81% of respondents respectively.

Table 4. *Frequencies and Percentage of Available Evidence-Based Strategies Reported by Teachers*

Strategy	f	Percentage
Antecedent Package	219	87
Behavioral Package	176	70
CBTYC	66	26
Joint Attention	97	39
Modeling	242	96
Naturalistic Teaching	169	67
Peer Training Package	69	27
Pivotal Response Treatment	49	19
Schedules	238	94
Self-Management	204	81
Story-Based Interventions	156	62

Use of evidence-based strategies. Descriptive analyses that included frequencies, percentages, means, and standard deviations (see Table 5) were used to examine the extent to which each of the 11 evidence-based strategies were reportedly used by educators to facilitate the inclusion of students with ASD. Ratings of 1 and 2 indicated low usage, while ratings of 4 and 5 indicated high usage of each strategy.

Consistent with the findings of Hess et al. (2008) and Stahmer et al. (2005), Pennsylvania educators reported consistent use of few evidence-based practices. Specifically, only Modeling ($M = 3.90$, $SD = 0.91$) and Schedules ($M = 3.90$, $SD = 0.94$) were reported as used very often by 42% and 33% of educators, respectively. No evidence-based strategies were indicated as always

used. Antecedent Package (M= 3.41, SD= 1.05), Behavioral Package (M= 3.05, SD= 1.32), Naturalistic Teaching (M= 2.82, SD= 1.25), and Self-Management (M= 2.94, SD= 1.03) were reportedly used sometimes by educators. Pivotal Response Treatment was least often used (M=1.43, SD= 0.78).

Table 5. *Frequency and Percentage of Reported Use of Evidence-Based Strategies by Educators*

Activity											M	SD
	Not at All (1)		Rarely (2)		Sometimes (3)		Very Often (4)		Always (5)			
	f	%	f	%	f	%	f	%	f	%		
Antecedent Package	22	7	17	5	68	21	119	36	22	7	3.41	1.05
Behavioral Package	58	18	19	6	38	12	116	36	16	5	3.05	1.32
CBTYC	160	49	25	8	37	11	7	2	1	4	1.70	1.14
Joint Attention	135	41	13	4	68	21	23	7	8	2	2.01	1.22
Modeling	10	3	5	2	42	13	136	42	58	18	3.90	0.91
Naturalistic Teaching	58	18	33	10	59	18	87	27	9	3	2.82	1.25
Peer Training Package	151	46	51	16	29	9	11	3	3	1	1.63	0.94
Pivotal Response Treatment	173	53	39	12	25	8	4	1	1	<1	1.43	0.78
Schedules	9	3	3	1	61	19	108	33	70	21	3.90	0.94
Self-Management	32	10	32	10	111	34	62	19	10	3	2.94	1.03
Story-Based	95	29	41	13	82	25	23	7	6	2	2.21	1.13

Need for evidence-based strategies. Descriptive analyses including frequencies, percentages, means, and standard deviations (see Table 6) were used to examine the extent to which each of the 11 evidence-based strategies were reportedly needed by educators to facilitate

the inclusion of students with ASD. Ratings of 1 and 2 indicated low need, while ratings of 4 and 5 indicated high need for each strategy.

Consistent with the findings of Stahmer et al. (2005), a high degree of need for evidence-based strategies to facilitate the inclusion of students with ASD was reported by Pennsylvania educators. Evidence-based practices indicated as much needed included Antecedent Package (M= 3.76, SD= 1.06), Behavioral Package (M= 3.72, SD= 1.20), Modeling (M= 4.18, SD= 0.78), Naturalistic Teaching (M= 3.65, SD= 1.09), Schedules (M= 4.00, SD= 0.88), and Self-Management (M=3.88, SD= 0.86). Comprehensive Behavioral Treatment for Young Children (CBTYC; M= 2.59, SD= 1.33), Peer Training Package (M= 2.65, SD= 1.18), and Story-Based Interventions (M= 3.20, SD= 1.03) were reported as somewhat needed. Pivotal Response Treatment (M= 2.29, SD= 1.05) and Joint Attention (M= 2.39, SD= 1.09) were rated lowest in need by Pennsylvania educators.

Table 6. *Frequencies and Percentages of Reported Need for Evidence-Based Strategies by Educators*

Activity	Not at All (1)		(2)		Somewhat (3)		(4)		Very (5)		M	SD
	f	%	f	%	f	%	f	%	f	%		
Antecedent Package	16	5	5	2	68	21	98	30	66	20	3.76	1.06
Behavioral Package	27	8	7	2	40	12	110	34	66	20	3.72	1.20
CBTYC	85	26	21	6	57	17	72	22	9	3	2.59	1.33
Joint Attention	69	21	51	16	102	31	16	5	11	3	2.39	1.09
Modeling	3	1	5	2	24	7	130	40	87	27	4.18	0.78
Naturalistic Teaching	21	6	5	2	65	20	108	33	50	15	3.65	1.09
Peer Training Package	58	18	43	13	90	28	42	13	15	5	2.65	1.18

Pivotal Response Treatment	75	23	52	16	96	29	14	4	7	2	2.29	1.05
Schedules	3	1	5	2	64	20	98	30	82	25	4.00	0.88
Self-Management	5	2	5	2	64	20	116	36	59	18	3.88	0.86
Story-Based	24	7	17	5	119	36	66	20	24	7	3.20	1.03

Evidence-based strategies for students with varying support needs. An independent t-test (see Table 7) with a Bonferroni adjusted alpha level of .005 was conducted to examine group differences between teachers of students with minimal support needs (level 1) and teachers of students with substantial support needs (level 3) for the 11 evidence-based strategies.

A significant difference between level 1 (M= 3.47, SD= 1.04) and level 3 teachers (M= 4.12, 0.72) was evidenced for reported need for Behavioral Package; $t(109.94) = -4.23, p = .001$. A significant difference between level 1 (M= 3.92, SD= 0.72) and level 3 teachers (M= 4.19, SD= 0.62) was also evidenced for reported need for Naturalistic Teaching; $t(118.67) = -4.60, p = .001$. A significant difference was furthermore found between level 1 (M= 3.41, SD= 0.89) and level 3 teachers' (M= 3.99, SD= 0.83) reported need for Schedules; $t(131.40) = -3.06, p = .002$. Level 1 teachers (M= 3.41, SD= 0.99) and level 3 teachers (M= 3.90, SD= 0.88) also significantly differed on reported need for Self-Management; $t(126.79) = -3.09, p = .002$. A significant difference between level 1 (M= 2.82, SD= 0.97) and level 3 teachers' (M= 3.38, SD= 1.08) reported need for Story-Based Interventions was furthermore found; $t(134.99) = -3.20, p = .002$. Consistent with the findings of Werts et al. (1996), teachers of students with substantial needs reported greater need for these evidence-based strategies than teachers of students with minimal support needs.

Table 7. *Mean and Standard Deviation for Educators' Reported Need for Staff Supports According to Student Support Needs*

Evidence-Based Practice	Support Needs	n	M	SD	t	p (2 tailed)
Antecedent Package	Minimal Support	65	3.58	.967	-1.531	.128
	Substantial Support	74	3.82	.866		
Behavioral Package	Minimal Support	64	3.47	1.038	-4.226	.001
	Substantial Support	74	4.12	.721		
CBTYC	Minimal Support	64	2.89	1.210	-.941	.349
	Substantial Support	71	3.08	1.180		
Joint Attention	Minimal Support	64	2.56	.871	-.029	.977
	Substantial Support	74	2.57	1.171		
Modeling	Minimal Support	64	3.92	.719	-2.353	.020
	Substantial Support	72	4.19	.620		
Naturalistic Teaching	Minimal Support	64	3.34	.979	-4.602	.001
	Substantial Support	74	4.04	.766		
Peer Training Package	Minimal Support	64	2.92	1.103	.653	.515
	Substantial Support	73	2.79	1.178		
Pivotal Response Treatment	Minimal Support	64	2.50	.873	.166	.868
	Substantial Support	70	2.47	1.113		
Schedules	Minimal Support	65	3.54	.885	-3.063	.003
	Substantial Support	73	3.99	.825		
Self-Management	Minimal Support	64	3.41	.988	-3.087	.002
	Substantial Support	72	3.90	.875		
Story-Based Interventions	Minimal Support	65	2.82	.967	-3.200	.002
	Substantial Support	72	3.38	1.080		

Staff Supports to Facilitate Inclusion

Availability of staff supports. Descriptive analyses, specifically frequencies and percentages (see Table 8), were used to examine availability of each of the 18 staff supports cited.

Consistent with the findings of Werts et al. (1996), few staff supports were unanimously reported available by Pennsylvania educators. Consultation with family/parent and consultation

with special education teacher were reported available by most participants (89% and 87%, respectively). Support from local universities or colleges, professional organizations, and parent resource centers were reported available by the fewest participants (<1%, 1% and 1% respectively). Fewer than half of respondents indicated adequate planning time or resources to facilitate inclusive practices for students with ASD (37% and 23% of participants, respectively). Only 57% of participants indicated support from the Principal available to facilitate inclusion of students with ASD. Professional development in Autism and Inclusive Practices were reported available by only 26% and 18% of participants, respectively.

Table 8. *Frequencies and Percentages of Available Staff Supports*

Staff Support	F	Percentage
Adequate planning time	93	37
Adequate resources	58	23
Consultation with school administrator	96	38
Support from Principal	142	57
Consultation with school psychologist	167	67
Consultation with guidance counselor	71	28
Consultation with special education teacher	219	87
Consultation with general education teacher	172	69
Consultation with related service provider	160	64
Consultation with medical or mental health agencies	45	18
Consultation with PaTTAN	66	26
Consultation with intermediate unit	79	31
Consultation with family/parent	223	89

Local university/college	1	<1
Professional organization	2	1
Parent resource center	3	1
Professional development training in Autism	64	26
Professional development training in inclusive practices	45	18

Use of staff supports. Descriptive analyses including frequencies, percentages, means, and standard deviations (see Table 9) were used to examine the extent to which each of the 18 staff supports were reportedly used by educators to facilitate the inclusion of students with ASD. Ratings of 1 and 2 indicated low usage, while ratings of 4 and 5 indicated high usage of each strategy.

Although no study to date has directly measured educators' perceived use of staff supports to facilitate the inclusion of students with ASD, it was hypothesized that Pennsylvania educators would report a moderate use of staff supports to facilitate the inclusion of students with ASD. The findings of this investigation confirm this hypothesis. Pennsylvania educators reported moderate use of the following staff supports: Consultation with family/parent (M= 3.87, SD= 1.06), related service providers (M= 3.57, SD= 1.05), special education teachers (M= 3.20, SD= 1.01), general education teachers (M= 3.16, SD= 1.08), and school psychologists (M= 3.04, SD= 1.10). Moderate use of Principal support was furthermore reported by Pennsylvania educators (M= 3.02, SD= 0.89).

Table 9. *Frequency and Percentage of Reported Use of Evidence-Based Strategies by Educators*

Activity	Not at All (1)		Rarely (2)		Sometimes (3)		Very Often (4)		Always (5)		M	SD
	F	%	f	%	f	%	f	%	f	%		
Adequate Planning Time	19	8	82	33	103	42	38	15	3	1	2.69	0.87
Adequate Resources	15	6	59	24	109	45	55	23	4	2	2.89	0.88
Consultation with Administrator	47	19	31	13	108	44	34	14	24	10	2.82	1.19
Support from Principal	20	8	21	9	153	62	40	16	13	5	3.02	0.89
Consultation with School Psychologist	33	13	26	11	107	43	60	24	21	9	3.04	1.10
Consultation with Guidance Counselor	90	37	46	19	61	25	39	16	6	2	2.28	1.14
Consultation with Special Education Teacher	23	9	9	4	136	56	51	21	26	11	3.20	1.01
Consultation with General Education Teacher	28	11	17	7	112	46	64	26	24	10	3.16	1.08
Consultation with Related Service Providers	14	6	18	7	73	30	96	39	46	19	3.57	1.05
Consultation with Medical/Mental Health Agencies	143	59	37	15	55	23	6	2	1	<1	1.70	0.93
Consultation with PaTTAN	141	58	32	13	36	15	30	12	5	2	1.88	1.08
Consultation with IU	137	56	12	5	47	19	33	14	15	6	2.09	1.36

Consultation with Family/Parent	8	3	18	7	54	22	85	35	81	33	3.87	1.06
Local University/College	216	91	3	1	17	7	1	<1	1	<1	1.18	0.61
Professional Organization	223	93	3	1	13	5	1	<1	1	<1	1.15	0.56
Parent Resource Center	234	97	0	0	5	2	1	<1	1	<1	1.07	0.56
Professional Development in Autism	162	67	7	3	37	15	30	12	7	3	1.82	1.24
Professional Development in Inclusive Practices	179	74	9	4	32	13	17	7	5	2	1.60	1.09

Need for staff supports. Descriptive analyses that included frequencies, percentages, means, and standard deviations (see Table 10) were used to examine the extent to which each of the 18 staff supports were reportedly needed by educators to facilitate the inclusion of students with ASD. Ratings of 1 and 2 indicated low need, while ratings of 4 and 5 indicated high need for each strategy. Consistent with the findings of Werts et al. (1996), Pennsylvania educators reported a great need for staff supports to facilitate the inclusion of students with ASD. Supports reported as most needed included adequate planning time (M= 4.45, SD= 0.77), adequate resources (M= 4.31, SD= .88), support from the Principal (M= 4.14, SD= 1.04), consultation with special education teachers (M= 4.16, SD= 0.99), consultation with general education teachers (M= 4.00, SD= 1.13), consultation with family/parent (M= 4.10, SD= 1.05), and professional development training in both Autism (M= 4.41, SD= 0.74) and inclusive practices (M= 4.13, SD= 1.04).

Table 10. *Frequencies and Percentages of Educators' Reported Need for Staff Supports to Include Students with ASD*

Staff Support	Not at All (1)		(2)		Somewhat (3)		(4)		Very (5)		M	SD
	f	%	f	%	f	%	f	%	f	%		
Adequate planning time	2	1	2	1	25	10	72	29	145	59	4.45	0.77
Adequate resources	3	1	2	1	45	18	61	25	134	55	4.31	0.88
Consultation with school administrator	15	6	16	7	54	22	78	32	80	33	3.79	1.15
Support from Principal	12	5	4	2	33	13	86	35	111	45	4.14	1.04
Consultation with School Psychologist	6	3	17	7	48	20	110	46	61	25	3.84	0.97
Consultation with Guidance Counselor	38	16	32	13	47	19	77	32	49	20	3.28	1.35
Consultation with Special Education teachers	4	2	11	5	45	18	66	27	119	49	4.16	0.99
Consultation with General Education teachers	5	2	29	12	37	15	61	25	111	46	4.00	1.13
Consultation with related service providers	10	8	13	5	30	12	98	40	84	34	3.87	1.18
Consultation with medical/mental health agencies	77	32	22	9	56	23	69	29	18	7	2.71	1.37
Consultation with PaTTAN	83	34	22	9	83	34	31	13	24	10	2.55	1.34
Consultation with IU	93	38	19	8	68	28	34	14	28	12	2.52	1.42
Consultation with family/parent	10	4	5	2	47	19	70	29	111	46	4.10	1.05

Local university/college	153	64	41	17	22	9	15	6	9	4	1.69	1.11
Professional organization	153	64	34	14	25	10	21	9	8	3	1.74	1.15
Parent resource center	138	57	53	22	30	12	12	5	9	4	1.76	1.09
Professional development in Autism	1	<1	3	1	22	9	87	36	131	54	4.41	0.74
Professional development in Inclusive Practices	11	5	8	3	29	12	87	36	109	45	4.13	1.04

Staff supports for students with varying support needs. An independent t-test with a Bonferroni adjusted alpha level of .003 was conducted (see Table 11) to examine group differences between teachers of students with minimal support needs' (level 1) and teachers of students with substantial support needs' (level 3) reported need for staff supports to include students with ASD. Results were consistent with those of Werts et al (1996). Educators of students with more substantial support needs (level 3) reported significantly greater need for staff support than educators of students with minimal support needs (level 1). Specifically, a statistically significant difference between level 1 teachers (M= 4.09, SD= 0.71) and level 3 teachers (M= 4.53, SD= 0.86) was evidenced for reported need for adequate planning time to include students with ASD; $t(133.30)= 3.24, p= .002$. A significant difference between level 1 teachers' (M= 3.70, SD= 0.81) and level 3 teachers' (M= 4.42, SD= 0.95) reported need for adequate resources to facilitate inclusion of students with ASD was also found; $t(132.59)= 4.74, p= .001$. Level 3 teachers reported a statistically significant greater need for consultation with

special education teachers than did level 1 teachers ($M= 4.07$, $SD= 1.22$ and $M= 3.68$, $SD= 1.22$ respectively); $t(120.30)= 2.21$, $p= .029$. Conversely, level 1 teachers reported a statistically significant greater need for consultation with general education teachers than level 3 teachers ($M= 4.16$, $SD= 1.04$ versus $M= 3.24$, $SD= 1.22$ respectively).; $t(97.98)= 6.07$, $p= .001$. Interestingly, level 1 teachers indicated a statistically significant greater need for consultation with family/parents than level 3 teachers ($M= 4.21$, $SD= 1.18$ and $M= 3.60$, $SD= 1.01$ respectively); $t(122.93)= 3.16$, $p= .002$. A statistically significant difference between level 1 teachers' ($M= 1.79$, $SD= 1.09$) and level 3 teachers' ($M= 2.81$, $SD= 1.20$) reported need for consultation with Pennsylvania Training and Technical Assistance Network (PaTTAN) was evidenced with level 3 teachers reporting greater need; $t(129.87)= 4.95$, $p= .001$. Similarly level 3 teachers reported statistically significant greater need for intermediate unit support than did level 1 teachers ($M= 2.83$, $SD= 1.20$ and $M= 1.70$, $SD= 1.17$ respectively); $t(130.86)= 5.35$, $p= .001$. Level 3 teachers reported statistically significant greater need for professional development in autism as well as inclusive practices than level 1 teachers ($M= 4.68$, $SD= 0.67$ compared to $M= 4.11$, $SD= 0.70$ and $M= 4.51$, $SD= 0.81$ compared to $M= 3.41$, $SD= 1.32$ respectively); $t(128.72)= 4.76$, $p= .001$ and $t(100.52)= 5.715$, $p= .001$ respectively.

Table 11. *Mean and Standard Deviation for Educators' Reported Need for Staff Supports to Facilitate Inclusion of Students with ASD*

Staff support	Support Needs	n	M	SD	t	p (2 tailed)
Adequate planning	Minimal Support	64	4.09	.706	3.239	.002
	Substantial Support	72	4.53	.855		
Adequate resources	Minimal Support	64	3.70	.810	4.744	.001
	Substantial Support	71	4.42	.951		
Consultation with school administrator	Minimal Support	63	3.48	.820	-.602	.548
	Substantial Support	71	3.59	1.358		

Support from Principal	Minimal Support	63	4.00	.622	-.231	.818
	Substantial Support	72	4.04	1.378		
Consultation with School Psychologist	Minimal Support	63	3.83	.661	.802	.424
	Substantial Support	70	3.70	1.108		
Consultation with Guidance Counselor	Minimal Support	62	3.45	1.035	1.010	.315
	Substantial Support	71	3.25	1.227		
Consultation with special education teachers	Minimal Support	63	3.68	.779	2.214	0.29
	Substantial Support	71	4.07	1.223		
Consultation with general education teacher	Minimal Support	62	4.16	1.043	4.740	.001
	Substantial Support	72	3.24	1.216		
Consultation with related service provider	Minimal Support	63	2.76	1.399	6.070	.001
	Substantial Support	72	3.99	.831		
Consultation with medical/mental health agencies	Minimal Support	63	1.78	1.099	6.993	.001
	Substantial Support	70	3.20	1.246		
Consultation with PaTTAN	Minimal Support	63	1.79	1.180	4.950	.001
	Substantial Support	70	2.81	1.195		
Consultation with IU	Minimal Support	63	1.70	1.173	5.352	.001
	Substantial Support	70	2.83	1.262		
Consultation with Family/parent	Minimal Support	63	4.21	1.180	3.163	.002
	Substantial Support	70	3.60	1.013		
Local University/College	Minimal Support	62	1.44	.969	-.402	.689
	Substantial Support	70	1.50	.864		
Professional Organization	Minimal Support	63	1.35	.845	2.432	.016
	Substantial Support	69	1.78	1.187		
Parent Resource Center	Minimal Support	63	1.40	.871	1.410	.161
	Substantial Support	70	1.63	1.024		
PD in Autism	Minimal Support	63	4.11	.698	4.760	.001
	Substantial Support	71	4.68	.671		
PD in Inclusive Practices	Minimal Support	63	3.41	1.315	5.715	.001
		71	4.51	.808		

CHAPTER 5

Discussion

The current study examined educators' perceptions of various issues related to the inclusion of students ASD in general education activities. Specifically, descriptive analyses and independent t-tests were used to analyze self-reported perceptions of a sample of Pennsylvania educators regarding (a) the extent to which students with ASD were seen as participating in inclusive school activities, (b) the adequacy of educators' training for inclusion, (c) the availability, use, and need for evidence-based strategies to facilitate inclusion, and (d) whether this varied for students with different levels of support needs. In addition, the study examined teacher perceptions of the availability, use, and need for staff supports to facilitate inclusion and whether this varied for students with different levels of support needs.

Findings

This study yielded several important findings. Research question 1 examined the extent to which educators reported that students with ASD at their schools were participating together with peers without disabilities in school activities. It was hypothesized that educators would report fewer than half of students with ASD were participating in inclusive school activities. Results supported this hypothesis. Pennsylvania educators who responded to the survey reported students with ASD are participating alongside typical peers very often or always in 7 of 11 school activities, or 64%. Although full-time participation in inclusive activities is reportedly low (67%), they are reportedly participating alongside typical peers frequently in activities such as lunch, assemblies, and recess. Teacher ratings indicate students with ASD only sometimes participate alongside typical peers in general education academic classes or other school activities or social events. It is important to note that this investigation did not explore participation in general education academic classes while controlling for level of impairment. It

is possible that students with substantial support needs require more intensive and individualized instruction best provided in a small group setting or that their participation in general education academic classes require supports not available in the respondent's school. Finally, teacher reports indicated students with ASD are not excluded from any inclusive school activities. This is an encouraging finding and reflects a pedagogical shift toward fostering inclusive practices for all students.

The second research question examined the perceived adequacy of training to teach students with ASD and it was hypothesized that educators would report a lack of adequacy of training. Consistent with previous ASD research (Fuchs, 2010; Scruggs & Mastropieri, 1996; Werts et al., 1996), Pennsylvania educators reported sub-adequate training for teaching students with ASD. Only 17% of teacher respondents indicated they felt they had adequate training to teach students with ASD. These findings provide additional empirical support for educators' need for training in supporting students with ASD.

The third set of research questions dealt with educators' perceptions regarding evidence-based strategies for facilitating the inclusion of students with ASD. Consistent with previous research (e.g., Hess, 2008), a variety of evidence-based strategies, namely Modeling, Schedules, Antecedent Package, and Self-Management, were reported available by Pennsylvania educators. However, based on previous research by Hess et al. (2008) and Stahmer et al. (2005), it was hypothesized that few evidence-based strategies would be reported as used by educators to facilitate the inclusion of students with ASD. Results supported this hypothesis, as Pennsylvania educators reported consistent use of few evidence-based practices. Specifically, only Modeling and Schedules were reported as used very often by 42% and 33% of educators, respectively. No evidence-based strategies were indicated as always used. While few evidence-based strategies

were reported to be used by Pennsylvania educators, it is possible that those strategies that are utilized are deemed sufficient for facilitating inclusion of students with ASD. Furthermore, it is possible that additional evidence-based strategies not indicated on the survey are being used to support inclusive practices of students with ASD.

In addition, based on the findings of Stahmer et al. (2005), it was hypothesized that a high degree of need for evidence-based strategies to facilitate the inclusion of students with ASD would be reported by these educators. This hypothesis was confirmed in the present investigation, with the evidence-based practices indicated as much needed including Antecedent Package, Behavioral Package, Modeling, Naturalistic Teaching, Schedules, and Self-Management. Finally, it was hypothesized based on the findings of Werts et al. (1996) that a significantly greater need for evidence-based strategies would be reported by teachers of students with substantial support needs (level 3 ASD) as compared to teachers of students with minimal support needs (level 1 ASD). The present investigation confirmed this hypothesis. Consistent with the findings of Werts et al. (1996), teachers of students with substantial needs reported greater need for Behavioral Package, Naturalistic teaching, Schedules, Self-Management, and Story-Based Interventions than teachers of students with minimal support needs. This finding likely reflects that students with more substantial needs require greater supports than students with minimal needs to participate in inclusive settings.

The final set of research questions examined educators' perceptions about staff supports in facilitating the inclusion of students with ASD. Although little previous research had been conducted in this area, it was hypothesized that Pennsylvania educators would report a general lack of availability of staff supports to facilitate the inclusion of students with ASD. Consistent with the findings of Werts et al. (1996), few staff supports were unanimously reported available

by these Pennsylvania educators. Consultation with family/parent and consultation with special education teacher were reported available by most participants, with support from local universities or colleges, professional organizations, and parent resource centers reported available by the fewest participants. Although few supports were reported available, it is possible these supports are perceived as sufficient by educators for facilitating inclusion of students with ASD. Further, it is possible additional staff supports not listed on the survey are available to support inclusive practices.

Although no study to date has directly measured educators' perceived use of staff supports to facilitate the inclusion of students with ASD, it was hypothesized that Pennsylvania educators would report a moderate use of staff supports to facilitate the inclusion of students with ASD. The present investigation confirmed this hypothesis as Pennsylvania educators reported moderate use of several of the identified staff supports (e.g., consultation with family/parent, related service providers, special education teachers, general education teachers, school psychologists, Principal support). Although these were reported as the most frequently used staff supports by Pennsylvania educators, it is unknown whether they are perceived to be the most effective. Future research may wish to explore the perceived efficacy of these supports for facilitating inclusion of students with ASD. Furthermore, it is possible that additional staff supports not listed on the survey are utilized by Pennsylvania educators. A qualitative investigation of supports available to facilitate the inclusion of students with ASD may prove fruitful.

Based on the findings of Werts et al. (1996), it was also hypothesized that Pennsylvania educators would report a great need for staff supports to facilitate the inclusion of students with ASD. Results of the present investigation confirmed this hypothesis. Educators of students with

more substantial support needs (level 3) reported significantly greater need for staff support than educators of students with minimal support needs (level 1). Specifically, a statistically significant difference between level 1 teachers and level 3 teachers was evidenced for several variables including reported need for adequate planning time to include students with ASD and reported need for adequate resources to facilitate inclusion of students with ASD. In addition, Level 3 teachers reported a statistically significant greater need for consultation with special education teachers than did level 1 teachers. Conversely, level 1 teachers reported a statistically significant greater need for consultation with general education teachers than level 3 teachers. Students with minimal support needs may be more likely to participate in general education classes necessitating consultation with general education teachers. Interestingly, level 1 teachers indicated a statistically significant greater need for consultation with family/parents than level 3 teachers. Consultation with family or parents may be a needed support for the specific purpose of facilitating inclusion of students with minimal support needs, more so than students with substantial support needs. Teachers of students with substantial support needs may consult with family members and parents for purposes other than inclusion, such as progress monitoring toward goals and behavior support planning.

A statistically significant difference between level 1 teachers' and level 3 teachers' reported need for consultation with Pennsylvania Training and Technical Assistance Network (PaTTAN) was also found, with level 3 teachers reporting greater need for consultation and intermediate unit support. Level 3 teachers also reported a statistically significant greater need for professional development in autism as well as inclusive practices than level 1 teachers. Collectively, these findings support the hypothesis that educators of students with more substantial support needs report a need for more support facilitating inclusion of students with

ASD than their minimal support counterparts. Professional development in the areas of both autism and inclusive practices may provide educators with the foundational skills to develop effective inclusive practices for students with substantial support needs.

Limitations, Future Research, and Implications for Practice

A number of limitations of the present investigation should be noted. First, survey research relies primarily upon self-report responses. The extent to which students are actually participating in inclusive settings, the evidence-based practices actually available and utilized, as well as the staff supports that are available and utilized were not confirmed with direct measures. Likewise, teachers were asked to classify a majority of their students with ASD as level 1 (minimal support needs), level 2 (support), or level 3 (substantial support needs). Although these classifications are consistent with the DSM-5, it is unknown whether the students described actually conform to the classifications provided by teacher respondents. Future research may consider incorporating direct measures to validate self-report responses such as medical diagnosis and direct observation.

Second, teachers were asked to indicate level of support required for “most” of their students with ASD, but the evidence-based strategies and staff supports reportedly used and needed may not have been specific to this majority. To prevent threats to content validity, future researchers may want to clarify survey questions by prompting participants to report on the support need reflective of most of their students (e.g. Level 1, 2, or 3).

Third, participants from 20 of the 67 counties in the Commonwealth of Pennsylvania comprised the final data set with a majority of respondents employed in the eastern and central regions of the state. As such, the external validity of the findings should be interpreted with

caution. The results of this study may not be representative of Pennsylvania as a whole. Replication of this study with a more representative sample is recommended.

Fourth, additional school demographics including socioeconomic factors that may contribute to the availability of and need for evidence-based strategies and staff supports were not explored in this present study. Future researchers may wish to consider how school demographics such as urban, suburban, and rural classification as well as poverty rates affect the availability, use of, and need for evidence-based strategies and staff supports to facilitate inclusion of students with ASD.

Fifth, the participant recruitment procedure did not permit calculation of response rate. Specifically, an email including a link to the *PA Inclusive Practices for ASD (PAIP-ASD)* survey was sent to Intermediate Unit TaC Supervisors, 10 randomly selected charter schools, and Lehigh University alumni, but no confirmation of receipt or record of forwarding to educators were required. Future researchers may consider contacting educators directly to establish response rate.

Furthermore, the *PA Inclusive Practices for ASD (PAIP-ASD)* survey required participants to select from available responses the inclusive activities, evidence-based strategies, and staff supports available at their schools. Participants were not afforded the opportunity to list other activities, strategies, or supports not indicated on the survey. Future research may wish to provide the option for respondents to indicate other activities, strategies, and supports available for supporting the inclusion of students with ASD that are not listed on the survey.

Additionally, the *PA Inclusive Practices for ASD (PAIP-ASD)* was designed to provide a quantitative measure of inclusive activities in which students are engaged as well as evidence-based practices and staff supports available to facilitate inclusive practices. Educators'

perceptions of the quality of these activities, strategies, and supports were not assessed. A qualitative investigation of inclusive practices and the strategies and supports to facilitate these endeavors is recommended.

Correspondingly, the evidence-based strategies from which participants were asked to select were comprised of multiple treatments and examples that may have been difficult to discern. For instance, Comprehensive Behavioral Treatment for Young Children was defined as a strategy involving a combination of applied behavior analytic procedures delivered to children under age 8 and involve a low student-to-teacher ratio. It is possible respondents were unsure of what constitutes “behavior analytic procedures.” Participants also may have selected strategies based on some familiar components, such as “choice” in Antecedent Package. Future researchers may wish to revise the descriptions of evidence-based strategies to include less technical language and the option to select specific components of each strategy described. Furthermore, it may be prudent to provide participants the option to indicate if they are unaware if the strategy is available in their schools.

Although the findings of this study indicated that students with ASD are participating alongside typical peers in a variety of settings, results also indicated that students with ASD are only participating “very often” or “always” in 7 of the 11 school activities listed. Future research may wish to explore participation in inclusive activities while controlling for support need. Specifically, it may be that students with minimal support needs are participating in inclusive activities full-time, whereas their more substantial support needs counterparts are not.

Results of this investigation suggest Pennsylvania educators feel less than adequately trained to teach students with ASD. Only 17% of teacher respondents indicated they believed they had adequate training to teach students with ASD. These findings have significant

implications for professional development practices. Professional development has been established in the literature as critical to supporting implementation by influencing teachers' knowledge as well as practice (Spillane & Thompson, 1997; Joyce & Showers, 2002). Therefore, changes in professional development practices may facilitate improved implementation of inclusive practices by Pennsylvania educators.

Participants of this investigation indicated in-service as the most frequent type of training in facilitating the inclusion of students with ASD. In an investigation of several years of systematic research on training teachers in public schools, Joyce and Showers (2002) found training that consisted only of theory and discussion produced a modest gain in knowledge and the ability of teachers to demonstrate the new skills in the protected training environment yet no transfer to the classroom. Results indicated the addition of feedback, demonstration, and practice lead to more substantial gains. The addition of on-the-job coaching resulted in the largest gains in knowledge, ability to demonstrate skills, and transfer of skills to the classroom with students (Joyce & Showers, 2002). The authors concluded that training and coaching require full support and participation of school administrators as well as buy-in from participating teachers. Based on the findings of Joyce and Showers (2002), it is prudent to consider the formats for, quality of, administrative participation in, and teacher buy-in of professional development activities. Supplementing current training practices with on-the-job coaching may result in increased perceived competence to implement inclusive practices with students with ASD.

Quantity of professional development is also an important consideration. Supovitz and Turner (2000) examined data from a National Science Foundation Teacher Enhancement program called the Local Systemic Change initiative and found intensive and sustained staff development activities were necessary to affect teaching practices. Specifically, teachers with

more than two weeks of professional development reported inquiry-based teaching practices and investigative classroom culture above average. Inquiry-based teaching practices were described as reform-based strategies including engaging students in hands-on activities and designing and implementing their own scientific investigations. Investigative culture included classroom strategies used when teaching science such as arranging seating to facilitate group discussion and assigning students to work in cooperative groups. Teachers with no professional development were predicted to employ inquiry-based practices four-tenths of a standard deviation less frequently than that of the average sample. Based on these findings, future research may wish to explore not only the specific sources of training (i.e. preservice, in-service, on-the-job, or conferences) that teachers deem most beneficial for preparing them to successfully include students with ASD in general education settings but also the duration of professional development activities.

Results of this investigation also indicated few evidence-based practices are consistently used by Pennsylvania educators. Specifically, only Modeling and Schedules were reported as used very often by 42% and 33% of educators, respectively. No evidence-based strategies were indicated as always used. Future research may wish to explore additional evidence-based strategies utilized by educators as well as the perceived sufficiency of these strategies to facilitate the inclusion of students with ASD.

Correspondingly, moderate use of staff supports to facilitate the inclusion of students with ASD was reported by Pennsylvania educators. However, it is unknown whether these are perceived to be the most effective. Future research may wish to explore the perceived efficacy of these supports for facilitating inclusion of students with ASD. Furthermore, it is possible that additional staff supports not listed on the survey are utilized by Pennsylvania educators. A

qualitative investigation of supports available to facilitate the inclusion of students with ASD may prove fruitful.

Alarminglly, fewer than half of respondents indicated having adequate planning time or resources and only 57% of participants indicated having support from the principal to facilitate inclusion of students with ASD. Principal support has been identified in the literature as critical to the implementation of inclusive school policies and practices as well as the allocation of resources to support inclusion (Cook et al., 1999; Horrocks, White, & Roberts, 2008, Janney, Snell, Beers, & Raynes, 1995). The success of inclusion hinges largely on the principal's ability and willingness to create a systems-level climate in which the whole school embraces success and achievement for all students, and resources for curriculum and instruction are appropriately allocated to support this endeavor (Horrocks et al., 2008; Janney, Snell, Beers, & Raynes, 1995). Research has demonstrated principals who prioritize instructional issues, demonstrate support for special education, and provide high-quality professional development for educators produce improved outcomes for students with disabilities such as ASD and others who are at risk for school failure (e.g., Barnett & Monda-Amaya, 1998; DiPaola & Walther-Thomas, 2003; Horrocks et al., 2008). For example, according to DiPaola and Walther-Thomas (2003), effective principals invest and allocate the necessary resources to devise policies and procedures that facilitate classroom support such as personnel and materials, information, role flexibility, and shared leadership opportunities. The extent of administrative support impacts the degree to which educators develop and implement interventions designed to improve student performance (DiPaola, & Walther-Thomas, 2003). Principals who foster positive attitudes toward inclusion can also ensure that classroom teachers have regularly scheduled common planning time to address instructional needs and classroom concerns (DiPaola & Walther-Thomas, 2003).

Administrator buy-in is thus critical to ensuring teachers are afforded the supports necessary to successfully include students with ASD.

The current study examined educators' perceptions of various issues related to the inclusion of students ASD in the Commonwealth of Pennsylvania. Self-reported perceptions of a sample of Pennsylvania educators confirmed most of the hypotheses. However, several limitations of the current study may limit the ability to draw and generalize conclusions. Additional research is needed to insure that students with ASD are included in a greater variety of activities, and that teachers are adequately trained and supported in this effort.

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APPENDIX A

E-mail to Educators

Dear Educator,

As a teacher in the Commonwealth of Pennsylvania, you play a critical role in the social and academic success of students. My name is Kimberly Seymour and you are invited to share your perspectives regarding the inclusion of students with Autism (ASD) in general education by completing an electronic survey. This survey is being conducted as part of my dissertation research under the supervision of Dr. Christine Cole, Professor of School Psychology at Lehigh University. The purpose of the survey is to explore professional development supports and resources needed to support inclusive practices in Pennsylvania.

Please click on the following link to proceed to the survey:

Kimberly J. Seymour

Doctoral Candidate of School Psychology

Lehigh University

Kij3@lehigh.edu

APPENDIX B

PA Inclusive Practices for ASD Survey

By entering this survey, you are indicating your agreement to participate as a subject in the research investigation on the educational inclusion of students with autism conducted by Kimberly Seymour under the supervision of Dr. Christine Cole.

The purpose of the survey is to explore professional development supports and resources needed to support inclusive practices in Pennsylvania.

The PA Inclusive Practices for ASD Survey will take approximately 15 minutes to complete. To protect your anonymity, your survey will be linked to a randomly generated code and any identifiable information you include will be removed. No names will be referenced in this study. Any information collected through this research project that personally identifies you will not be voluntarily released or disclosed without your separate consent, except as specifically required by law. All data will be stored on a password-protected computer in a locked office.

To encourage your participation, the first 20 teachers to complete the survey and every 10th teacher thereafter will be eligible to receive a \$10 gift card at the close of the survey.

Your decision whether or not to participate is voluntary. You are free to withdraw from this study by exiting the survey at any time without jeopardizing your relationship with Lehigh University. You are also free to skip any questions you are not comfortable answering.

If you have any questions about this study and what is expected of you, you may call Kimberly Seymour at 484-553-1931. You may report problems that may result from your participation or direct questions in regard to your rights as a subject in this study to Naomi Coll of Lehigh University's Office of Research Integrity at (610) 758-3021 or inors@lehigh.edu. All reports or correspondence will be kept confidential.

ENTER

☐

EXIT

☐

Please check your current position

- ☐ General Education Teacher
- ☐ Special Education Teacher
- ☐ Administrator

Which of the following best describes the education setting in which you currently work? Check one.

- ☐ Public School
- ☐ Private School
- ☐ Charter School
- ☐ Juvenile Correctional Center
- ☐ Alternative School
- ☐ Special Education School
- ☐ Gifted and Talented School
- ☐ Early Childhood Center
- ☐ Virtual School

Please select the county in which you currently teach.

- ☐ Adams
- ☐ Allegheny
- ☐ Armstrong
- ☐ Beaver
- ☐ Bedford
- ☐ Berks
- ☐ Blair
- ☐ Bradford
- ☐ Bucks
- ☐ Butler
- ☐ Cambria
- ☐ Cameron
- ☐ Carbon
- ☐ Centre
- ☐ Chester
- ☐ Clarion
- ☐ Clearfield
- ☐ Clinton
- ☐ Columbia
- ☐ Crawford
- ☐ Cumberland
- ☐ Dauphin
- ☐ Delaware
- ☐ Elk
- ☐ Erie
- ☐ Fayette
- ☐ Forest
- ☐ Franklin
- ☐ Fulton
- ☐ Greene
- ☐ Huntingdon
- ☐ Indiana
- ☐ Jefferson
- ☐ Juniata
- ☐ Lackawanna
- ☐ Lancaster
- ☐ Lawrence
- ☐ Lebanon
- ☐ Lehigh
- ☐ Luzerne
- ☐ Lycoming
- ☐ Mckean
- ☐ Mercer

- ☐ Mifflin
- ☐ Monroe
- ☐ Montgomery
- ☐ Montour
- ☐ Northampton
- ☐ Northumberland
- ☐ Perry
- ☐ Philadelphia
- ☐ Pike
- ☐ Potter
- ☐ Schuylkill
- ☐ Snyder
- ☐ Somerset
- ☐ Sullivan
- ☐ Susquehanna
- ☐ Tioga
- ☐ Union
- ☐ Venango
- ☐ Warren
- ☐ Washington
- ☐ Wayne
- ☐ Westmoreland
- ☐ Wyoming
- ☐ York

Please select the highest degree you have earned.

- ☐ Bachelors Degree
- ☐ Masters Degree
- ☐ Specialist Degree
- ☐ Doctoral Degree

Check if you have obtained any of the following endorsements

- ☐ BCaBA
- ☐ BCBA
- ☐ ASD Endorsement Certificate
- ☐ Behavior Specialist Licensure
- ☐ NA

Please select the total number of years you have been teaching

- ☐ <1
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ >10

Please select the grade level(s) you are currently teaching

- ☐ Pre-K
- ☐ K
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12
- ☐ 12+

Please select the total number of students with Autism Spectrum Disorder (ASD) you are currently teaching

- ☐ 0
- ☐ 1-5
- ☐ 6-10
- ☐ 11-14
- ☐ 15+

As a whole, please select which of the following describes most of the students with ASD you currently teach:

Minimal Support	Support	Substantial Support
<p>Deficits in social communication which cause noticeable impairments when supports are not present. These students may appear to have a decreased interest in social interactions, often find it difficult to initiate social interactions and demonstrate unusual or unsuccessful responses to social advances of others.</p> <p>Common behaviors:</p> <ul style="list-style-type: none"> • Inflexibility in behavior which causes significant interference with functioning in one or more context • Difficulty switching between activities • Problems with organization and planning which hinder independence. 	<p>Marked deficits in verbal and nonverbal social communication skills. Social impairments are apparent even with supports in place. These students rarely initiate social interactions and experience reduced or atypical responses to social advances of others.</p> <p>Common behaviors:</p> <ul style="list-style-type: none"> • Inflexibility in behavior • Difficulty coping with change • Restricted/repetitive behaviors obvious to the casual observer that interfere with functioning in a variety of contexts • Some difficulty changing focus or action (transitions). 	<p>Severe deficits in verbal and nonverbal social communication skills which cause severe impairments in functioning, very limited social initiations, and minimal response to social advances of others.</p> <p>Common behaviors:</p> <ul style="list-style-type: none"> • Inflexibility in behavior • Extreme difficulty coping with change • Restrictive/repetitive behaviors that interfere with functioning • Great difficulty changing focus or action (transitions)

- ☐ Minimal Support
☐ Support
☐ Substantial Support

Please indicate the type of training you have received on teaching students with ASD in inclusive (regular) classrooms. Check all that apply

- ☐ None
- ☐ In-service training
- ☐ On-the-job training
- ☐ Conferences
- ☐ University training
- ☐ Other

How adequately do you feel you have been trained to teach students with ASD?

- ☐ 1 (Not at all)
- ☐ 2
- ☐ 3 (Somewhat)
- ☐ 4
- ☐ 5 (Very)

Please select all activities that are available at your school:

- ☐ General education academic classes
- ☐ Physical education classes (PE)
- ☐ Extracurricular activities or clubs
- ☐ Assemblies
- ☐ Social events (ex. field trips, class parties)
- ☐ School performances (ex. plays, musicals)
- ☐ Sporting or athletic events
- ☐ Lunch
- ☐ Recess
- ☐ Homeroom
- ☐ Community-based instruction (CBI)

To what extent are students with ASD at your school participating together with peers without disabilities in each activity?

	1	2	3	4	5
General education academic classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical education classes (PE)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extracurricular activities or clubs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assemblies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social events (ex. field trips, class parties)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School performances (ex. plays, musicals)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sporting or athletic events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recess	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Homeroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community-based instruction (CBI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These are definitions of common support strategies for facilitating inclusion of students with ASD. Please use these as a reference (if needed) when answering questions on the next page

Support Strategies	Definition
Antecedent Package	Modifying situational events that happen before a target behavior to increase the likelihood of success or reduce probability of problem behavior (e.g. behavior chain interruption; behavioral momentum; choice; contriving motivational operations; cueing and prompting/prompt fading; environmental enrichment; environmental modification of task demands, social comments, adult presence, intertrial interval, seating, or familiarity with stimuli; errorless learning; errorless compliance; habit reversal; incorporating echolalia, special interests, thematic activities, or ritualistic/obsessive activities into tasks; maintenance interspersal; noncontingent access; noncontingent reinforcement; priming; stimulus variation; and time delay).
Behavioral Package	Designed to reduce problem behavior and teach functional alternative behaviors/skills (e.g. behavioral sleep package; behavioral toilet training/dry bed training; chaining; contingency contracting; contingency mapping; delayed contingencies; differential reinforcement strategies; discrete trial teaching; functional communication training; generalization training; mand training; noncontingent escape with instructional fading; progressive relaxation; reinforcement; scheduled awakenings; shaping; stimulus-stimulus pairing with reinforcement; successive approximation; task analysis; and token economy).
Comprehensive Behavioral Treatment for Young Children	Involve a combination of applied behavior analytic procedures (e.g. discrete trial, incidental teaching, etc.) delivered to children under age 8 and involve a low student-to-teacher ratio (e.g. 1:1). Also referred to as ABA programs or behavioral inclusive program and early intensive behavioral intervention.
Joint Attention	Involves building foundational skills involved in regulating the behaviors of others. Teaching a child to respond to the nonverbal social bids of others or to initiate joint attention interactions (e.g. pointing to objects, showing items/activities to another person, and following eye gaze).
Modeling	Relies on an adult or peer providing a demonstration of the target behavior that should result in an imitation of the target behavior by the individual with ASD. Can include simple and complex behaviors and is often combined with other strategies such as prompting and reinforcement. Examples include live modeling and video modeling.
Naturalistic Teaching Strategies	Involve using child-directed interactions to teach functional skills in the natural environment. Often involve providing a stimulating environment, modeling how to play, encouraging conversation, providing choices and direct/natural reinforcers, and rewarding reasonable attempts. Examples include but are not limited to focused stimulation, incidental teaching, milieu teaching, embedded teaching, and responsive education and prelinguistic milieu teaching.
Peer Training Package	Teaching children without disabilities (classmates or siblings) strategies for facilitating play and social interactions with children with ASD. May include components of other treatment packages (e.g., self-management for peers, prompting, reinforcement, etc.). Common names for intervention strategies

	include peer networks, circle of friends, buddy skills package, Integrated Play Groups™, peer initiation training, and peer-mediated social interactions.
Pivotal Response Treatment	Also referred to as PRT, Pivotal Response Teaching, and Pivotal Response Training. Focuses on targeting “pivotal” behavioral areas — such as motivation to engage in social communication, self-initiation, self-management, and responsiveness to multiple cues, with the development of these areas having the goal of very widespread and fluently integrated collateral improvements. Key aspects of PRT intervention delivery also focus on parent involvement in the intervention delivery, and on intervention in the natural environment such as homes and schools with the goal of producing naturalized behavioral improvements.
Schedules	The presentation of a task list that communicates a series of activities or steps required to complete a specific activity. Often supplemented by other interventions such as reinforcement and can take several forms including written words, pictures or photographs, or work stations.
Self-Management	Promoting independence by teaching individuals with ASD to regulate their behavior by recording the occurrence/nonoccurrence of the target behavior, and securing reinforcement for doing so. Initial skills development may involve other strategies and may include the task of setting one’s own goals. Reinforcement is a component of this intervention with the individual with ASD independently seeking and/or delivering reinforcers. Examples include the use of checklists (using checks, smiley/frowning faces), wrist counters, visual prompts, and tokens.
Story-based Intervention Package	Involve a written description of the situations under which specific behaviors are expected to occur. Stories may be supplemented with additional components (e.g., prompting, reinforcement, discussion, etc.). Social Stories™ are the most well-known story-based interventions and they seek to answer the “who,” “what,” “when,” “where,” and “why” in order to improve perspective-taking.

Check all evidence-based strategies available at your school

- ☐ Antecedent Package
- ☐ Behavioral Package
- ☐ Comprehensive Behavioral Treatment for Young Children (CBTYC)
- ☐ Joint Attention
- ☐ Modeling
- ☐ Naturalistic Teaching
- ☐ Peer Training Package
- ☐ Pivotal Response Treatment
- ☐ Schedules
- ☐ Self-Management
- ☐ Story-Based Interventions

Indicate to what extent you have used each strategy to support the inclusion of students with ASD:

	Not At All	Rarely	Sometimes	Very Often	Always
	1	2	3	4	5
Antecedent Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behavioral Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comprehensive Behavioral Treatment for Young Children (CBTYC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Joint Attention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modeling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturalistic Teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Training Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pivotal Response Treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schedules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Story-Based Interventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate to what extent you feel this strategy is needed to help you include students with ASD

	Not At All		Somewhat		Very
	1	2	3	4	5
Antecedent Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behavioral Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comprehensive Behavioral Treatment for Young Children (CBTYC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Joint Attention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modeling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naturalistic Teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer Training Package	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pivotal Response Treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schedules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Story-Based Interventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Check all staff supports that have been made available to you to help you include students with ASD

- ☐ Adequate planning time
- ☐ Adequate resources (ex. materials, money, time) to implement inclusion plans
- ☐ Consultation with school administrator
- ☐ Support from Principal
- ☐ Consultation with school psychologist
- ☐ Consultation with guidance counselor
- ☐ Consultation with special education teacher
- ☐ Consultation with general education teacher
- ☐ Consultation with related service provider (Speech therapist, OT, PT)
- ☐ Consultation with medical or mental health agencies
- ☐ Consultation with PaTTAN
- ☐ Consultation with intermediate unit
- ☐ Consultation with family/parent
- ☐ Local university/college
- ☐ Professional organization
- ☐ Parent resource center
- ☐ Professional development training in Autism
- ☐ Professional development training in inclusive practices

Indicate to what extent you have used each support to help you include students with ASD

	Not At All	Rarely	Sometimes	Very Often	Always
	1	2	3	4	5
Adequate planning time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequate resources (ex. materials, money, time) to implement inclusion plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with school administrator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support from Principal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with school psychologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with guidance counselor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with special education teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with general education teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with related service provider (Speech therapist, OT, PT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with medical or mental health agencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with PaTTAN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with intermediate unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with family/parent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local university/college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not At All	Rarely	Sometimes	Very Often	Always
	1	2	3	4	5
Professional organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parent resource center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development training in Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development training in inclusive practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate to what extent you feel each staff support is needed to help you include students with ASD

	Not at All		Somewhat		Very
	1	2	3	4	5
Adequate planning time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequate resources (ex. materials, money, time) to implement inclusion plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with school administrator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support from Principal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with school psychologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with guidance counselor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with special education teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with general education teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with related service provider (Speech therapist, OT, PT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at All		Somewhat		Very
	1	2	3	4	5
Consultation with medical or mental health agencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with PaTTAN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with intermediate unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with family/parent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local university/college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parent resource center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development training in Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development training in inclusive practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for your participation. The first 20 teachers to complete the survey and every 10th teacher thereafter will be eligible to receive a \$10 gift card at the close of the survey. If you wish to be considered, please email Kim Seymour at kij3@lehigh.edu with "Survey" as the subject and provide the following information:

- * Your first and last name
- * Your mailing address

This information will be used for the sole purpose of distributing gift cards and study results. Personal information will not be shared.

KIMBERLY J. SEYMOUR

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EDUCATIONAL EXPERIENCE

Applied Behavior Analysis Program, Board Certified Behavior Analyst Certification (July 2015-Present)

Florida Institute of Technology Online

PhD Candidate, School Psychology (2004-Present)

Subspecialization in Special Education and Counseling

Lehigh University Bethlehem, PA 18015

APA accredited and NASP approved program

Ed.S., School Psychology (October, 2010)

Lehigh University Bethlehem, PA 18015

M.Ed., Human Development (May, 2007)

Lehigh University Bethlehem, PA 18015

B.A., Psychology (May, 2002)

Cum Laude

Muhlenberg College Allentown, PA 18104

PROFESSIONAL CERTIFICATES

ISIS-SWIS Facilitator (March, 2015)

Pennsylvania Positive Behavior Support (PAPBS) Independent Facilitator (December, 2014)

SWIS Facilitator (October, 2013)

Praxis I: Pre-Professional Skills Test (June, 2009)

Praxis II: School Psychologist (July, 2010)

Educational Specialist: School Psychology (October, 2010)

PROFESSIONAL ORGANIZATIONS

American Psychological Association, Division 16 (School Psychology)

National Association of School Psychologists

Psi Chi – The National Honor Society in Psychology

CLINICAL EXPERIENCE

EDUCATIONAL CONSULTANT (June, 2013-Present)

Pennsylvania Training and Technical Assistance Network (PaTTAN), Harrisburg, PA

- Responsible for providing training and technical assistance to support the initiatives of the Bureau of Special Education and build the capacity of local educational agencies to serve students receiving special education services via evidenced-based practices and interventions.
- Provide training and consultation for the following educational initiatives: Autism, Inclusive Practices, and Positive Behavioral Interventions and Supports (PBIS).

- Serve as Central Region Lead, collaborating with Autism and Secondary Transition Leads to establish and disseminate evidenced-based post-secondary supports for college- and/or career-ready youth with Autism.
- Provide direct consultative support and training to 32 classrooms participating in the Autism Initiative's ABA Supports project, including guidance related to: organization of the classroom environment, materials, schedules, and data systems; building staff capacity to deliver instruction in the least restrictive environment; building effective processes of instructional delivery including use of intensive teaching/errorless teaching procedures, error correction, discrete trial instruction, direct instruction, vocal training procedures, generalization procedures, mand training, natural environment training, social skills instruction, group instruction, and fluency training; language assessments including the VB-MAPP; and a function-based approach to behavior interventions.
- Support PA's Inclusive Practices initiative by assisting in the development and evaluation of a framework designed to ensure school personnel implement the big ideas, concepts and competencies needed to leverage data, systems and practices to effectively educate students with complex instructional needs in inclusive educational settings.
- Support PA's Behavior Initiative by providing training and technical assistance related to universal screening of behavior as well as tier 3 behavior supports and intervention.
- Serve as Regional Facilitator to a school district recipient of Pennsylvania's Safe Schools Healthy Students grant, School-Wide Information System (SWIS) Facilitator and regional trainer, and Individual Student Information System (ISIS) Facilitator and regional trainer.
- Participate in state leadership team meetings involving the partnership of Pennsylvania's Community of Practice on School Based Behavioral Health Services and Systems of Care to develop a continuum of services to promote the academic, social and emotional well-being of all Pennsylvania's students.

SCHOOL PSYCHOLOGIST (August, 2012-June, 2013)

Carbon-Lehigh Intermediate Unit #21, Schnecksville, PA

- Responsible for administering intelligence, achievement, and functional behavior assessments to students grades K-12.
- Responsible for writing comprehensive psychological reports communicating assessment data of students.
- Participate in multidisciplinary team meetings, conferences and in-service activities.
- Responsible for providing individual and group counseling to students grades K-12.
- Responsible for conducting professional development trainings on current topics in special education including curriculum based assessment and functional behavior assessment.

SCHOOL PSYCHOLOGY DOCTORAL INTERN (June, 2011-August, 2012)

Carbon-Lehigh Intermediate Unit #21, Schnecksville, PA

- Responsible for administering intelligence, achievement, and functional behavior assessments to students attending center-based alternative education and partial hospitalization programs (grades K-12).
- Responsible for writing comprehensive psychological reports communicating assessment data of students.
- Participated in multidisciplinary team meetings, conferences and in-service activities.
- Responsible for providing individual and group counseling to students grades K-12.

School Psychologist (June, 2010-June 2011)

Behavioral Health Associates, Lehigh, PA

- Responsible for administering intelligence, achievement, curriculum-based, and functional behavior assessments to students attending private alternative education and partial hospitalization programs (grades K-12).
- Responsible for writing comprehensive psychological reports communicating assessment data of students.
- Participated in conferences and in-service activities.
- Conducted trainings on curriculum based assessment and other current topics in special education.

BEHAVIOR SPECIALIST CONSULTANT (April, 2010-June, 2013)

Elwyn Autism Resource Center Hub, Allentown, PA

- Designed and implemented skill acquisition and behavioral reduction programs for children diagnosed with Autism.
- Provided functional behavior assessment and progress monitoring of behavioral goals.
- Participated in multi-disciplinary interagency treatment team meetings and collaborated with other service systems to develop individualized goals.

BEHAVIOR SPECIALIST CONSULTANT (August, 2008-September, 2012)

Concern Counseling Services, Bethlehem, PA

- Designed and implemented skill acquisition and behavioral reduction programs for children diagnosed with Autism.
- Provided functional behavior assessment and progress monitoring of behavioral goals.
- Participated in multi-disciplinary interagency treatment team meetings and collaborated with other service systems to develop individualized goals.

FIELD SUPERVISOR (August, 2007-June, 2011)

Autism Spectrum Disorders Grant, Lehigh University, Bethlehem, PA

- Assisted in training school psychologists as integration consultants for students with Autism.
- Oversaw the development and establishment of multiple practicum field sites throughout Northeastern Pennsylvania.
- Supervised graduate student trainees' experiences.
- Served as a liaison to school district personnel to facilitate inclusion of students with Autism in mainstream activities.
- Met with trainees on a bi-weekly basis for the purpose of supervision.
- Collaborated with diversity consultants to address multicultural issues related to practice.
- Responsible for submitting proposals to present at national conferences yearly.
- Responsible for disseminating training information at national conferences yearly.

INTERNING SCHOOL PSYCHOLOGIST (August, 2007- June, 2009)

Whitehall-Coplay School District, Whitehall, PA

- Responsible for administering intelligence, achievement, curriculum-based, and functional behavior assessments to students attending pre-kindergarten, elementary, middle, and high schools.
- Responsible for writing comprehensive psychological reports communicating assessment data of students.
- Participated in intervention development and consultation with the Multiple Disciplinary Team.
- Served as a member of the School Wide Assessment Team responsible for benchmark assessment and progress monitoring under a Response to Intervention initiative.
- Attended IEP/MDE, IST/CST, SAP, parent, and other meetings.
- Participated in Safety Committee meetings.
- Participated in conferences and in-service activities.
- Conducted research on issues and topics in special education.
- Responsible for the provision of individual, group, social skills, and crisis counseling to students.

PROJECT COORDINATOR (August, 2006- November, 2007)

Philadelphia Account, Lehigh University, Bethlehem, PA

- Provided administrative oversight for one contract serving an adult with special needs.
- Maintained and oversaw the ISP processes for one adult client with special needs.
- Responsible for the supervision of 5 teaching staff providing community and vocational support to one adult client with special needs.
- Responsible for the submission of quarterly data to Philadelphia County.
- Responsible for the development and submission of annual review reports to Philadelphia County.
- Met on a monthly basis with the teaching staff and Executive Director.
- Met on a bi-monthly basis with the Office Manager and Executive Director to review the budget.

INTERNING SCHOOL PSYCHOLOGIST (August, 2006- June, 2007)

Lehigh Area School District, Lehigh, PA

- Responsible for administering intelligence, achievement, curriculum-based, and functional behavior assessments to students attending elementary, middle, and high schools throughout Lehigh, PA.
- Responsible for writing comprehensive psychological reports communicating assessment data of students in elementary, middle, and high schools.
- Participated in intervention development and consultation with Multiple Disciplinary Team.
- Responsible for the provision of individual, group, social skills, and crisis counseling to students.
- Attended IEP/MDE, IST/CST, SAP, parent, and other meetings.
- Participated in conferences and in-service activities.

- Conducted research on issues and topics in special education.

CO-SUPERVISOR (August, 2005- June, 2007)

Low Incidence Disability Grant, Lehigh University, Bethlehem, PA

- Assisted in training school psychologists as integration consultants for students with low-incidence disabilities.
- Oversaw the development and establishment of 16 practicum field sites each year.
- Supervised 8 graduate student trainees' experiences each year.
- Served as a liaison to school district personnel to facilitate inclusion.
- Met with trainees on a bi-weekly basis for the purpose of supervision.
- Collaborated with diversity consultants to address multicultural issues related to practice.
- Responsible for submitting proposals to present at national conferences yearly.
- Responsible for disseminating training information at national conferences yearly.

CO-MANAGING DIRECTOR (August, 2005- August, 2006)

Transition and Assessment Services, Lehigh University, Bethlehem, PA

- Provided administrative oversight for various contracts serving adults and adolescents with special needs.
- Maintained and oversaw the ISP and IEP processes for 8 clients with special needs.
- Facilitated the supervision process of 14 teaching staff for adult services contracts.
- Responsible for the development and submission of annual review reports to 5 counties funding community and vocational support services for clients.
- Met on a weekly basis with the Project Coordinator, Co-Managing Director, and Executive Director to discuss programmatic matters.
- Responsible for identifying professional development needs of teaching staff.
- Met on a monthly basis with the Office Manager, Co-Managing Director, and Executive Director to review the budget.

THERAPEUTIC STAFF SUPPORT (August, 2002- August, 2004)

Concern Counseling Services, Bethlehem, PA

- Implemented skill acquisition and behavioral reduction programs for children diagnosed with Attention-Deficit Hyperactivity Disorder, Autism, Intermittent Explosive Disorder, and Intellectual Disability.
- Assisted in maintaining structure and safety in school and home environments.
- Provided counseling to parents of children with significant social, behavioral, and academic skill deficits.
- Recorded daily data collection, functional behavior assessments, and intervention plans for one boy aged 4 years and one boy aged 17 years.

BEHAVIOR SPECIALIST (May, 2000- August, 2002)

Devereux Millwood Learning Center, Millwood, NY

- Provided intensive educational and behavioral intervention based on Applied Behavior Analysis to children with autism.
- Performed ongoing data collection and record keeping of children with autism aged 4 to 16 years.
- Assisted in establishing a classroom environment that was conducive to maximum learning by maintaining structure and guiding students in socially appropriate behavior.
- Supervised students and was responsible for their welfare, safety, and location at all times.
- Implemented class activities as outlined in class schedules and written plans.
- Graphed data for skill acquisition and behavioral reduction programs in children's notebooks on daily basis.

HOME BEHAVIORAL THERAPIST (Summer 2001)

Scarsdale Special Education, Scarsdale, NY

- Implemented skill acquisition and behavioral reduction programs with one 12-year-old boy with Autism.
- Performed ongoing data collection and record keeping.
- Assisted in designing academic programs and task analysis to be applied at the student's home.

MENTAL HEALTH TECHNICIAN – INTERN (Fall 2001)

Lehigh Valley Adolescent Psychiatric Unit, Bethlehem, PA

- Provided mental health care to 12 adolescents on an inpatient psychiatric unit.

- Assisted in group therapy sessions.
- Provided individual counseling to patients.
- Charted patients' psychiatric evaluations and maintained patient safety and confidentiality on the unit.

RESEARCH EXPERIENCE

DISSERTATION (August, 2014-Present)

Lehigh University, Bethlehem, PA

Advisor: Christine Cole, Ph.D.

Title: Inclusion of Students with Autism: Teacher Perceptions Regarding the Use of and Need for Evidenced-Based Practices and Supports.

QUALIFYING PROJECT (September, 2009)

Lehigh University, Bethlehem, PA

Advisor: Christine Cole, Ph.D.

Title: Behavior Specific Praise: The Effects of a Teacher Intervention on the Rule-Violating Behavior of Preschool Children without Disabilities.

DATA COLLECTION ASSISTANT (August, 2004- June, 2005)

Project PASS, Lehigh University, Bethlehem, PA

- Scheduled school visits with teachers.
- Conducted behavioral observations of students in grades 1-6 during core academic classes.
- Administered the Woodcock-Johnson III tests of achievement to students with and without Attention-Deficit Hyperactivity Disorder in grades 1-6.
- Administered curriculum based assessment probes to students in grades 1-6 with and without Attention-Deficit Hyperactivity Disorder.
- Responsible for scoring achievement tests and curriculum based assessment probes.
- Performed data entry on Woodcock-Johnson III computerized program.

PUBLICATIONS

O'Dell, S.M., Vilaro, B.A., Kern, L., Kokina, A., Ash, A.N., Seymour, K.J. et al. (2010). JPBI 10 years later: Trends in research studies. *Journal of Positive Behavior Interventions*.

PROFESSIONAL PRESENTATIONS

Seymour, K.J. (August 2016). Practical Strategies to Teaching Learners with High Functioning Autism. Training presented at Penn State University, State College, PA.

Seymour, K.J., Harned, A., Alvino, D., Sokol, N., Smith, A., & Poggi, K. (November, 2015). Functional Behavior Assessments & Positive Behavior Support Plans. Training presented at PaTTAN, Harrisburg, PA.

Seymour, K.J., & Stoehr, M. (August 2015). Post-Secondary Education Transition Considerations for Students with Autism. Presented at the National Autism Conference, State College, PA.

Seymour, K.J., & Stoehr, M. (August 2015). Workforce Transition Considerations for Students with Autism. Presented at the National Autism Conference, State College, PA.

Seymour, K.J., & Franchock, L. (2014). High Functioning Autism Series. Training presented at PaTTAN, Harrisburg, PA.

Seymour, K.J., & Franchock, L. (2015). Practical Strategies to Teaching Adult Learners with HFA and ADHD. Training presented at PaTTAN, Pittsburgh, PA.

Seymour, K.J., & Franchock, L. (2015). Practical Strategies to Teaching Adult Learners with HFA and ADHD. Training presented at PaTTAN, King of Prussia, PA.

- Seymour, K.J. (2014). Functional Behavior Assessments & Positive Behavior Support Plans. Training presented at the Gettysburg Leadership Conference and PBSPs (7/23/14) at Gettysburg Leadership Conference, Gettysburg, PA.
- Seymour, K.J. (2014). Introduction to the School Wide Information System. Training presented at Donegal Intermediate Unit, Marietta, PA.
- Seymour, K.J. (2014). Behavior Screening Tools within Three-Tiered Models of Support. Training presented at PaTTAN, Harrisburg, PA.
- Seymour, K.J. (2013). AIMSWEB. Training presented at the Jim Thorpe Area School District, Jim Thorpe, PA.
- Seymour, K.J. (2012). AIMSWEB & KTEA-II. Training presented at the Jim Thorpe Area School District, Jim Thorpe, PA.
- Seymour, K.J. (2010). Autism and effective classroom interventions. Training presented at Behavioral Health Associates, Inc.
- Seymour, K.J., Arthur, M., Hodgkins, A., Watson, C., & Wnoroski, A. (2010). Training school psychologists as inclusion facilitators for students with autism. Poster presented at the National Association of School Psychologists 2010 Annual Convention, Chicago, IL.
- Seymour, K.J., Gallo, G., Wright, M.K., & Marenus, M. (2009). Training school psychologists as inclusion facilitators for students with autism. Paper presented at the National Association of School Psychologists 2009 Annual Convention, Boston, MA.
- Thomas, L.B., Seymour, K.J., McCurdy, E.E. (2010). Developing effective positive behavior support plans. Training presented at Bangor Area School District.

VOLUNTEER EXPERIENCE

BOARD MEMBER (August, 2004- June, 2008)

College of Education Graduate Student Council, Lehigh University, Bethlehem, PA

- Assisted in organizing college-wide networking events, panel discussions, brown bag lectures, and orientation events for incoming College of Education graduate students. Assisted in the development of a multicultural resource center within the College of Education.

VOLUNTEER/GRANT REPRESENTATIVE (February, 2005-PRESENT)

School Psychology Program Interview Day, Lehigh University, Bethlehem, PA

- Assist in orientation activities and present findings from the Autism Spectrum Disorders Grant to prospective graduate students.

MENTOR (August, 2005- June, 2008)

School Psychology Program, Lehigh University, Bethlehem, PA

- Provided information and resources to first year graduate students enrolled in the Educational Specialist and Doctoral programs in School Psychology.

TEACHER ASSISTANT (Fall 2002)

Jewish Community Center, Allentown, PA

- Volunteered as a teacher's assistant for 20 children aged 3 years.
- Assisted in daily art projects, story telling, and athletic activities.

REFERENCES

Dr. Christine Cole, Ph.D.

Professor

Lehigh University, College of Education

111 Research Drive

Bethlehem, PA 18015-4792

(610) 758-3270, clc2@lehigh.edu

Dr. Lisa B. Thomas, Ph.D.
Consulting & Research Psychologist
Devereux Center for Effective Schools
2012 Renaissance Boulevard
King of Prussia, PA 19406
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Chris Cherny, M.Ed.
Assistant Director
Pennsylvania Training and Technical Assistance Network (PaTTAN)
6340 Flank Drive
Harrisburg, PA 17112
717-901-2223, ccherny@pattan.net